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ARIZONA MEDICINE

JOURNAL OF ARIZONA MEDICAL ASSOCIATION

(ISSN 0004-1556) MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

SEMINARS IN CONTINUING EDUCATION

CHEST MEDICINE

Cardiovascular Adaptations to Training: You've got to have heart 17

Thomas C. Rotkis, M.D.

ENDOCRINOLOGY & METABOLISM

Multidisciplinary Management of Carcinoma of the Thyroid 19

D. E. Hellman, M.D.

GASTROENTEROLOGY & LIVER DISEASE

Cancer and Ulcerative Colitis 26

George E. Burdick, M.D.

OBSTETRICS AND GYNECOLOGY

Preventing RH Hemolytic Disease 28

Louis Weinstein, M.D.

ONCOLOGY

Stage I Cancer of the Endometrium 29

Earl A. Surwit, M.D.

SPECIAL ARTICLES

Consumer Attitudes Toward Physicians and Health Care 33

Stephen W. Brown

Pesticides in Arizona: An Update 36

Esther Alcorn, M.D., et al

STATE OF THE ART

Stinging Insect Allergy: Venom Therapy 39

Jacob L. Pinnas, M.D.

EDITORIAL

Cardiology Patient Simulator 42

Gordon A. Ewy, M.D., et al

ARMA REPORTS 44

FUTURE MEETINGS 46

Errata 52

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XXVII, NO. 1

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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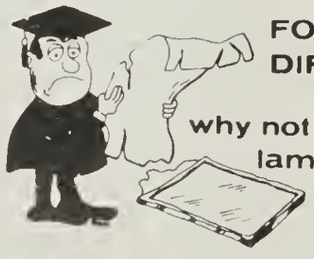
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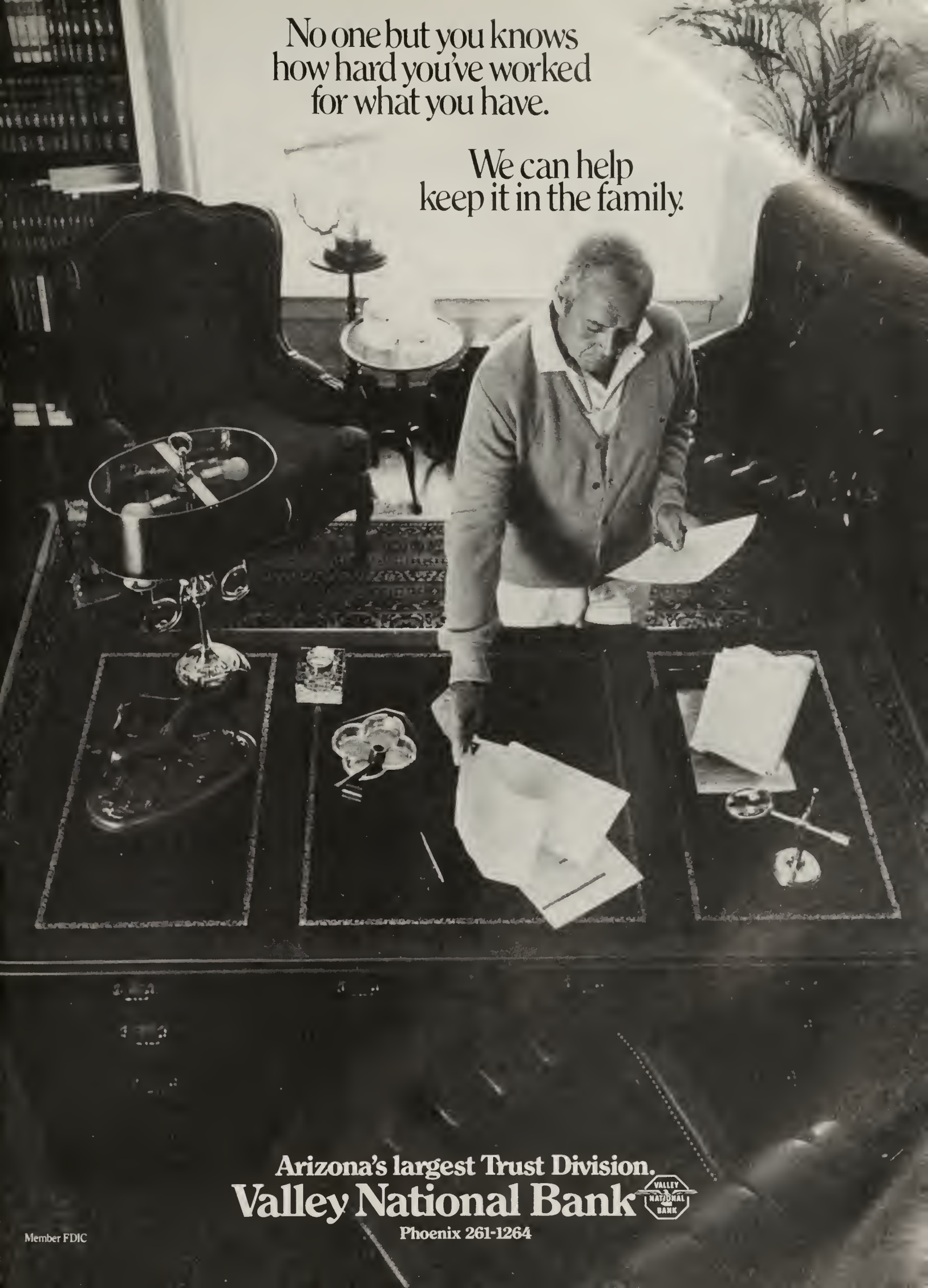
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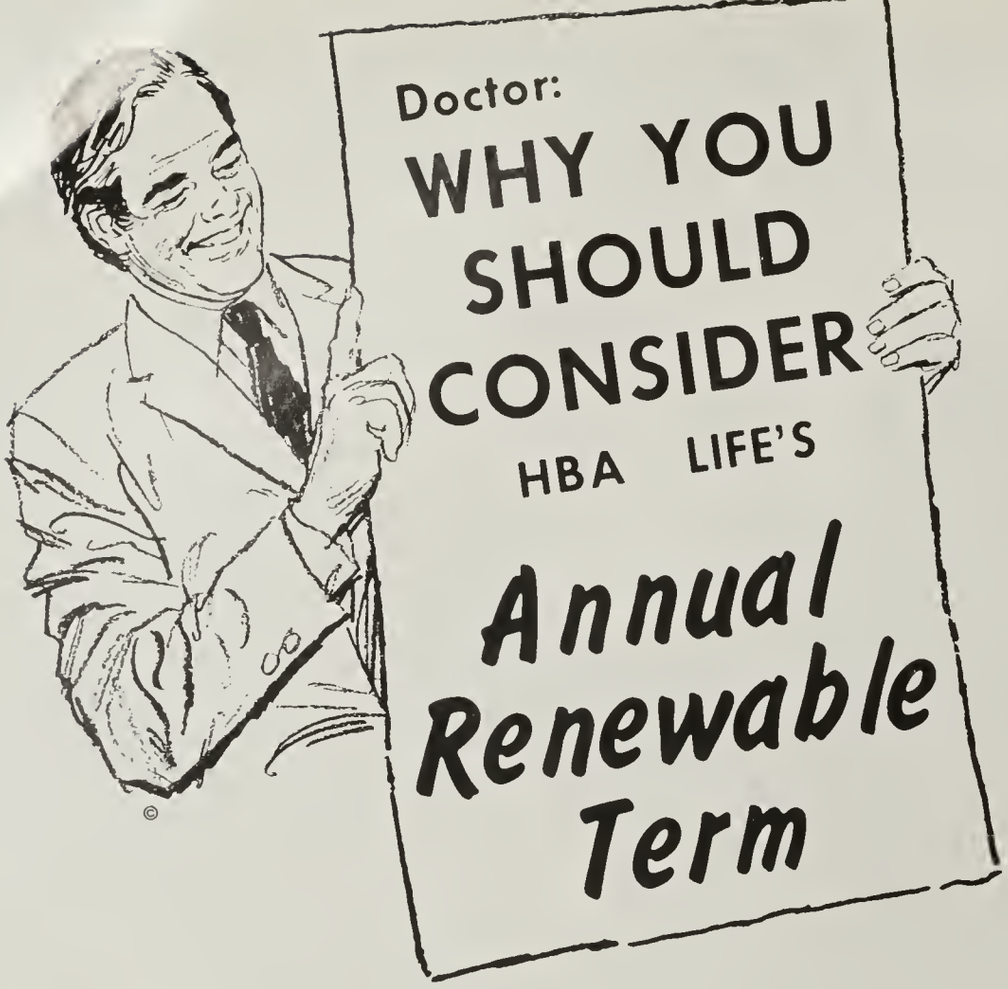
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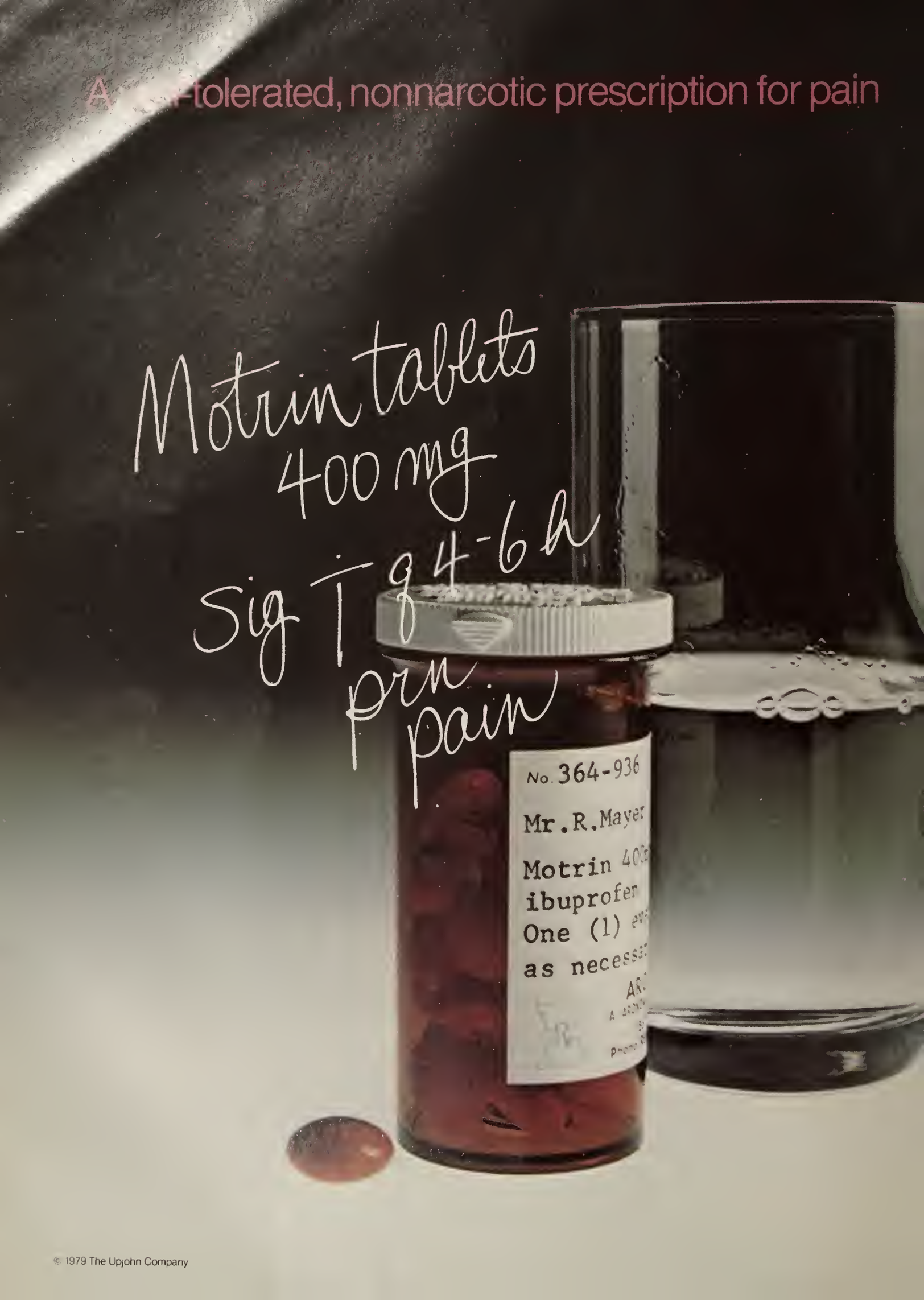
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Statistical significance		$p<0.02$	$p<0.01$	$p<0.05$	$p<0.02$	$p<0.002$

*0 = No relief 1 = Partial relief 2 = Complete relief

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Motrin demonstrated statistically significant greater relief of pain than did Darvon at all time intervals.

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Please turn the page for a brief summary of prescribing information.

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now pr[illegible]d an effe[illegible]ve analgesic for [illegible]d to moderate pain

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Indications and Usage: Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Relief of mild to moderate pain.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin:* used concomitantly may decrease Motrin blood levels. *Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,* headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

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Do not exceed 2400 mg per day.

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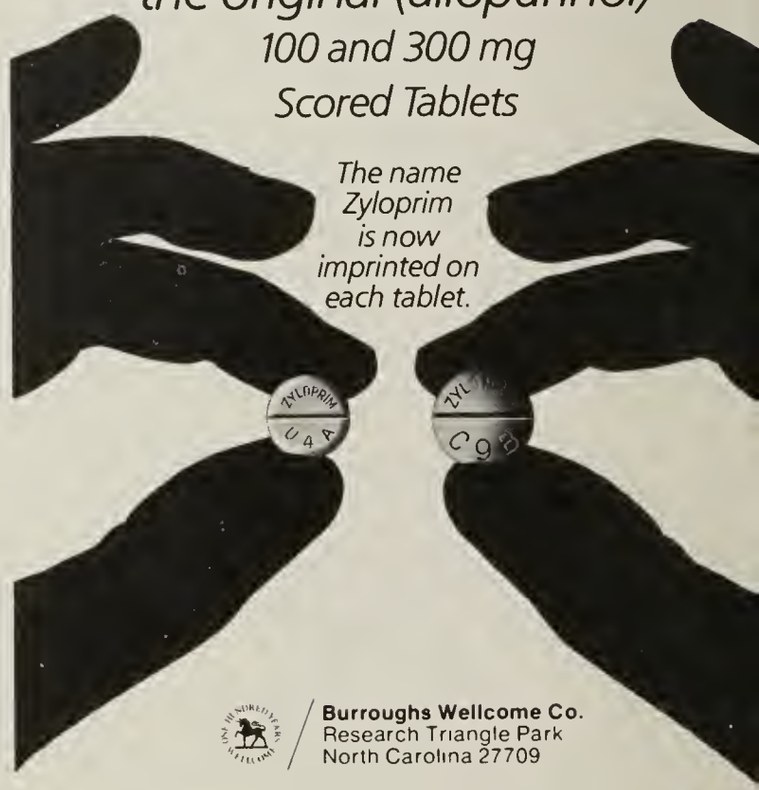
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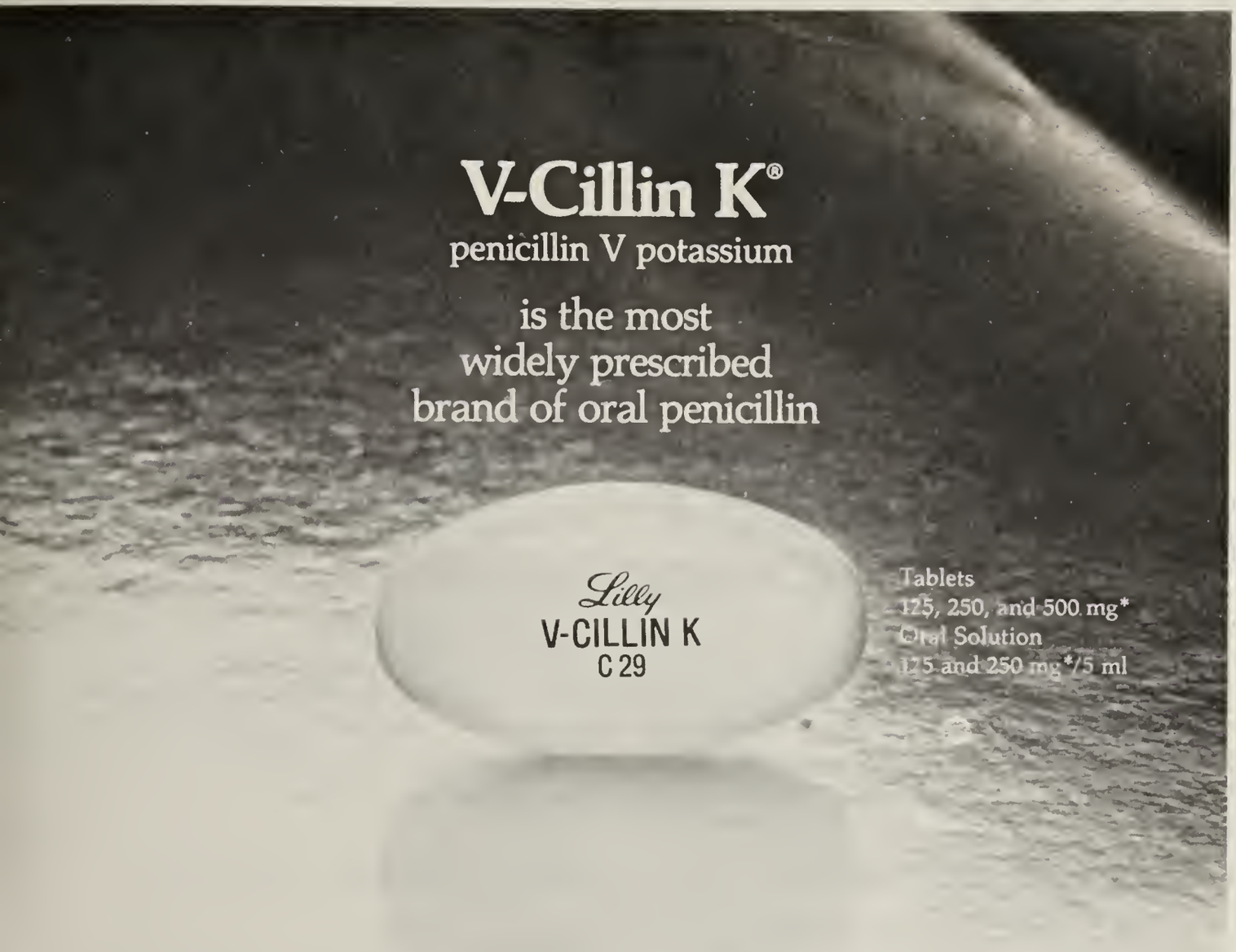
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Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin. [102175]

*Equivalent to penicillin V.

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VITA-STAT PROFILE: HYPERTENSION

by [illegible] E. Snyder, M.D., F.A.C.P. / Medical Director

The VITA-STAT® Automatic Blood Pressure Computer

Increasing interest in the development and use of automatic blood pressure measuring equipment has indicated a need to make available accurate and scientifically reliable information to members of the medical community.

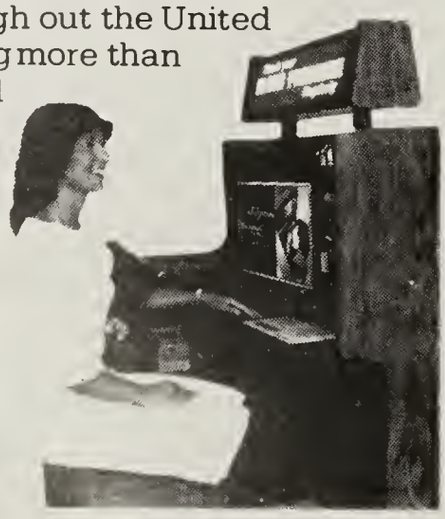
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Dr David M Berkson Chicago Department of Health re. study on Vita Stat Computer
May 1979 Amencan Journal of Public Health

"The Vita-Stat machine appears to me to be as good as a well-trained blood pressure technician."

Joseph H Chadwick, Ph.D., Director, Health Systems Programs
SRI International

"Blood pressure measurements by the Vita-Stat correlated as well as did measurements by physicians and provided reliable determi nations suitable for the purposes of screening, referral and monitoring of treatment."

Dr R. Patterson Russell, Director of the Hypertension Clinic at Johns Hopkins Hospital and Chairman of the High Blood Pressure Commission of Maryland
March, 1979 "Preventive Medicine"

***Copies of these and other reports, or medical information about the Vita-Stat Computer is available by writing to me:
Ralph E. Snyder, M.D., Medical Director
2801 75th Street North, St. Petersburg, Florida 33710.

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Seminars in Chest Medicine

Cardiovascular Adaptations To Training:
You've got to have heart

Thomas C. Rotkis, M.D.

Editors:
Faysal M. Hasan, M.D.
Richard I. Lemen, M.D.
Bernard E. Levine, M.D.

The role of physical activity in promoting cardiovascular health has received increasing attention in recent years. This is due in part to a growing body of scientific information that suggests that high levels of physical activity lower the prevalence of symptomatic coronary heart disease (CHD).[9, 11, 12] With increasing participation in exercise, physicians are seeing more patients who are actively engaged in exercise programs. Since endurance training can cause fundamental alterations in the cardiovascular system, it is important to be able to recognize these changes as variants of cardiovascular health and not disease.

There are a number of ways to assess the functional capacity of the cardiovascular system; however, the maximum oxygen uptake obtained during a maximal exercise test is the most useful. It is the product of the cardiac output and the arteriovenous oxygen difference, and therefore a measure of the ability of the central circulation to deliver oxygen to the active tissues and of the working muscles to extract and utilize the oxygen. This measure is highly dependent on age, sex, and state of fitness. For a young, untrained male the average maximum oxygen uptake is approximately 40 ml/kg.min, while highly trained endurance athletes may have values over 80 ml/kg.min.[1] The maximum oxygen uptake can be expected to improve by about 15 to 30% with training, and this improvement will be equally divided between an increased cardiac output and an enhanced peripheral oxygen uptake. The degree of change will depend on the age, baseline level of fitness, and the type of training program utilized. Although the changes are equally shared between central and peripheral adaptations, this paper will focus on the central adjustments.

Training brings about several important cardiovascular changes. The maximum cardiac output increases which allows the individual to increase his maximum work capacity. This does not lessen the

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cardiac output required to do a certain task; rather, the same cardiac output represents a lower relative demand on the cardiovascular system. While the maximum cardiac output is improved, the maximal heart rate either remains the same or may decrease 8 to 10 beats per minute;[14] consequently, an increased stroke volume is responsible for the improved cardiac performance. Since there is a linear realtionship between heart rate, cardiac output, and oxygen uptake at sub-maximal work loads,[7] heart rate may be used to judge the relative intensity of a work load. Also, since the mean arterial pressure does not change and cardiac output increases, the peripheral vascular resistance must decrease to accommodate the greater flow. At resting and submaximal work loads the cardiac output and peripheral vascular resistance are unchanged from pre-training values; however, there is a lower heart rate and an increasing stroke volume at any absolute work load. This augments the cardiac capacity by increasing the absolute range over which the heart rate can change.

A number of studies have been designed to determine what role the sympathetic and parasympathetic systems play in the heart rate alterations produced by training. A study by Ekblom[2] on untrained subjects found that atropine raised the resting heart rate from 60 to 100 beats per minute and had progressively less influence with increasing levels of work until there was no effect on the maximal heart rate. Propranolol however had an opposite effect in that it did not alter resting heart rate, but lowered maximum heart rate from 190 to 150 beats per minute. This would imply that at rest parasympathetic drive predominates and with exercise parasympathetic tone is withdrawn while sympathetic tone assumes increasing importance. A study by Frick[5] examined the effect of simultaneous sympathetic and parasympathetic block on normals and athletes at rest and during exercise at three levels of work. Although both groups showed an increase in resting heart rates, the increase was much greater in the athletes. During work the untrained subjects had a 10, 20, and 30 beats per minute decrease in heart rate at the increasing work loads, while the athletes showed no changes. This suggests that the athletes' lower resting heart rate was due to enhanced vagal tone and that they required less sympathetic stimulation to attain the same work level.

Cardiac enlargement is found in certain types of athletes.[6,8,13] Because of its association with various pathologic states, the cardiac hypertrophy has been believed to represent an adverse effect of exercise; however, current investigations indicate that the hypertrophic changes in athletes result in improved cardiac dynamics. A study by Raskoff[13] examined 30 long distance runners to determine whether there was any demonstrable cardia dysfunction. Four of the runners had increased cardiothoracic ratios on chest x-ray, 21 had left ventricular hypertrophy on EKG, six had increased left ventricular wall thickness by echocardiography, and three had increased left ventricular end diastolic volume. In all, 26 of the 30 subjects had at least one finding of left ventricular hypertrophy; however, none of the subjects had ischemic changes during maximal treadmill exercise, most showed above normal maximal cardiac outputs, and six had increased cardiac dynamics as determined by echocardiography. The investigators concluded that these athletes had normal or superior cardiac function in spite of the abnormal tests.

In another study, Morganroth[8] examined 56 college and professional athletes. He identified two patterns of cardiac hypertrophy by echocardiography and related these to the mode of athletic training. Runners and swimmers, who engage in repetitive, low intensity, isotonic exercise, had increased myocardial mass with normal left ventricular wall thickness, while the wrestlers and shot putters, who do primarily isometric work, had both increased left ventricular wall thickness as well as increased myocardial mass. The findings in the runners and swimmers are similar to volume overload states such as aortic or mitral insufficiency, and those in the power athletes are similar to pressure overload changes caused by aortic stenosis or hypertension. These findings are seen to persist years after cessation of training.[4,15] Whether they are of any pathologic significance remains to be determined, and may depend on whether myocardial vascular supply has increased to match the increased myocardial mass.

The electrocardiogram can also be misleading.[10,17] Supraventricular arrhythmias including sinus bradycardia, first degree A-V block, Wenckebach block, junctional rhythmn, and wandering atrial pacemaker are the most common abnormalities seen in athletes; however, right and left ventricular hypertrophy, permature ventricular contractions, and incomplete bundle branch block are also found. The rate, rhythm, and conduction changes are labile, often abolished by exercise, and are likely due to increased vagal tone, while the hypertrophic changes reflect a physiologic not pathologic change in myocardial mass. When seen in athletes these abnormalities cannot be assumed to be benign especially if other symptoms of cardiac disease are present. Therefore, it may be best either to avoid routine EKG examination in the asymptomatic athlete or to obtain a baseline EKG well before the question of cardiac disease enters consideration.

Exercise is not only used to train the cardiovascular system, but it is also employed to screen for occult coronary artery disease. A stress test is recommended for anyone over 35 who is beginning an excercise program, patients with atypical chest pain, and those at high risk for coronary heart disease, but its ability to detect impaired cardiac function has been questioned.[3,16,18] A positive test has a low predictive accuracy (the per cent of positive tests that are true positives) in an asmptomatic population because of the low prevalence of coronary heart disease and consequent high number of false positive tests. On the

other hand in a group with a high prevalence of coronary heart disease, such as those with angina, the test does not significantly improve the diagnostic accuracy of a history, physical exam, and resting EKG: a positive test supports the clinical diagnosis, while the high incidence of false negatives in this population makes a negative result valueless. The test does provide other information such as the development of arrhythmias, exertional hypotension, and other exercise related phenomena, but one must be aware of its limitations when it is used as a diagnostic tool.

In conclusion, endurance exercise induces many physiologic changes with the cardiovascular and muscular systems demonstrating the most profound effects. Cardiac performance is improved by an increased maximum cardiac output, a lower heart rate at sub-maximal work loads, and an increased stroke volume. These changes are regulated by an altered sympathetic-parasympathetic relationship any may be accompanied by an increase in myocardial size and EKG changes.

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Seminars in Endocrinology and Metabolism

Multidisciplinary Management of Carcinoma of the Thyroid

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Because carcinoma of the thyroid gland is rare and characterized by a variable course and prognosis,[1-7] indolent in most patients and very aggressive in a small number, rational diagnostic and treatment protocols that take into account this variability have not been developed. Rigid treatment protocols offer patients with indolent disease unnecessarily invasive therapy and ignore the risk of recurrence and death in those with more aggressive disease. This failure to recognize the marked variation in the natural history and growth potential of different thyroid cancers compromises treatment results and long term patient survival.

In the fall of 1972 a multidisciplinary team was developed at the University of Arizona Health Sciences Center to investigate the natural history, prognosis and treatment of thyroid cancer. The team consisted of an endocrinologist (DEH), surgeon (MK), nuclear medicine physician (JMW) and oncologist (BGMD). Each patient was examined regularly by at least three members of the team, and all patients with aggressive disease were followed at regular intervals by all four members of the team with frequent consultation to plan appropriate diagnostic studies and treatment. The purpose of this multidisciplinary approach was to develop rational

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treatment protocols designed to treat each cancer according to its aggressive potential and more effective treatment protocols for the management of patients with life threatening disease.

The majority of thyroid cancers are papillary carcinomas, generally characterized by a relatively indolent course[3, 6]. On microscopic examinaiton there is usually no identifiable capsule, although capsular invasion is common. Metastases to local lymphatics are common and generally do not impair long term survival. Spread to distant sites is rare. In contrast to mixed papillary-follicular carcinoma, pure papillary carcinomas often do not concentrate radioiodine (^{131}I). Although papillary carcinoma is a relatively indolent disease, recent data have confirmed that, even with disease confined to the thyroid gland, long term survival may be compromised, and, when the tumor has invaded soft tissues in the neck, mortality from this disease is 50% ten years after diagnosis.[8]

Approximately 15% of thyroid cancers are follicular carcinomas.[6] This cancer is characterized by an identifiable capsule with capsular invasion, vascular invasion, nodal spread and the potential for distant metastases to bone, lung and brain. Metastases affect long term survival, with pulmonary metastases demonstrating better prognosis than bone metastases.[8] In the presence of high plasma levels of thyroid stimulating hormone (TSH), these cancers usually concentrate ^{131}I. In contrast to papillary carcinoma, follicular carcinoma displays variable behavior, indolent in some patients and more aggressive in others. Prognosis for long term survival depends on the potential for growth and reproduction of the cancer cell, the age and sex of the patient, the presence of distant metastases, the extent of vascular and soft tissue invasion, the capacity of the tumor to concentrate ^{131}I and the adequacy of initial surgical, medical and isotope therapy offered to the patient.[6-10] The prognosis for long term survival in this cancer is not as favorable as in papillary carcinoma.[2, 3, 6, 9] Disease confined to the thyroid gland may adversely affect long term survival; disease beyond the confines of the thyroid gland markedly affects survival, with a mortality greater than 50% ten years after diagnosis.[8]

Most thyroid cancers are mixed papillary-follicular carcinomas.[6] While the pathologist classifies all cancers with papillary elements as papillary carcinoma, the behavior and potential for distant spread of the cancer depends on whether or not there are follicular elements present. It is important for the physician to be cognizant of the potential for distant spread and more aggressive disease in patients with mixed papillary-follicular carcinoma and provide a protocol for early detection and treatment of distant metastases.

Medullary carcinoma accounts for approximately 3% of all thyroid cancers. This tumor involves the parafollicular cell of the thyroid and is frequently multifocal in both lobes of the gland.[6, 10] Spread involves soft tissues in the neck, local lymphatics, mediastinal nodes, lungs, liver and bone.[3] Since this cancer originates in parafollicular tissue, it cannot concentrate ^{131}I, and, because of its slow growth and cell reproduction, responds poorly to chemotherapy.[17] More than one third of patients have residual disease following total surgical excision of the thyroid gland and involved lymph nodes, as demonstrated by persistent elevation of plasma thyrocalcitonin (TCT) levels.[10] Prognosis is excellent if the patient is young and has disease confined to the thyroid gland at the time of surgery. Nodal spread, present in 50% of patients at the time of initial surgery, compromises survival, with a 50% mortality less than ten years after diagnosis.[6]

Anaplastic carcinoma of the thyroid is a highly malignant cancer. A fatal outcome usually occurs weeks to months after diagnosis, consequent to invasion of soft tissues in the neck and respiratory embarrassment.[3, 6, 9] At autopsy there is often extensive spread to bone, lung, liver and brain.[9] Mortality in one large series was 80% in ten months and 100% in three years.[6] Because of the primitive nature of the tumor cell, iodine trapping by the tumor is rare. Although all age groups may be affected, this cancer is more common in elderly patients.

Exclusive of anaplastic disease, prognosis in thyroid cancer is age dependent.[1] Patients under the age of 40 generally have a favorable prognosis, while patients over the age of 40 and especially over the age of 60 have a poorer prognosis. Sex also affects prognosis, with males generally having more aggressive disease than females.

Because damage to the parathyroid glands or recurrent laryngeal nerve is an unacceptable surgical complication of treatment of a cancer that is usually indolent and not life threatening, surgical expertise is critical for the management of thyroid cancer. A total thyroidectomy is the optimal procedure, because normal thyroid tissue preferentially concentrates ^{131}I and prevents detection of metastases capable of concentrating this isotope.[11] Since thyroid cancer is generally less differentiated than normal thyroid tissue, high circulating levels of TSH are often necessary to detect and treat metastases,[7, 8, 11] with the concentration of ^{131}I in tumor tissue roughly proportional to circulating TSH levels.[11]

Following total thyroidectomy, more than four weeks of abstinence from thyroid hormone is required before plasma TSH rises to levels greater than 30 uIU/ml, a concentration that is adequate to permit sufficient uptake of ^{131}I by the thyroid remnant to ablate the remnant (Fig. 1)[12] A slow and variable rise in plasma TSH following thyroidectomy has previously been reported[11] and may reflect in part the slow metabolic degradation of thyroxin by the liver.

Historically, no rational protocol for isotopic scanning of patients with thyroid cancer maintained on thyroxin (T_4) or desiccated thyroid (DT) has been developed. Short intervals off T_4 or DT are insufficient to generate TSH levels high enough to stimulate ^{131}I uptake by

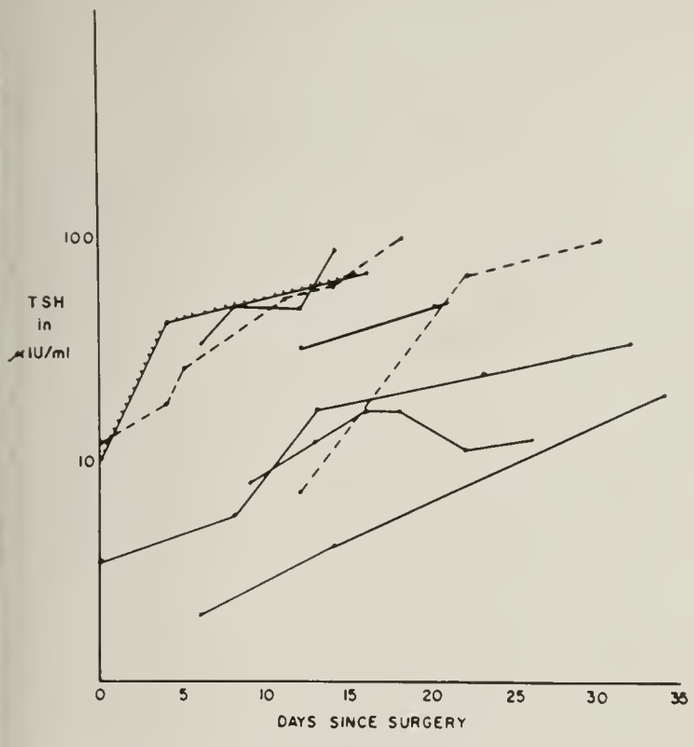


Figure 1
TSH levels after original surgery: individual curves

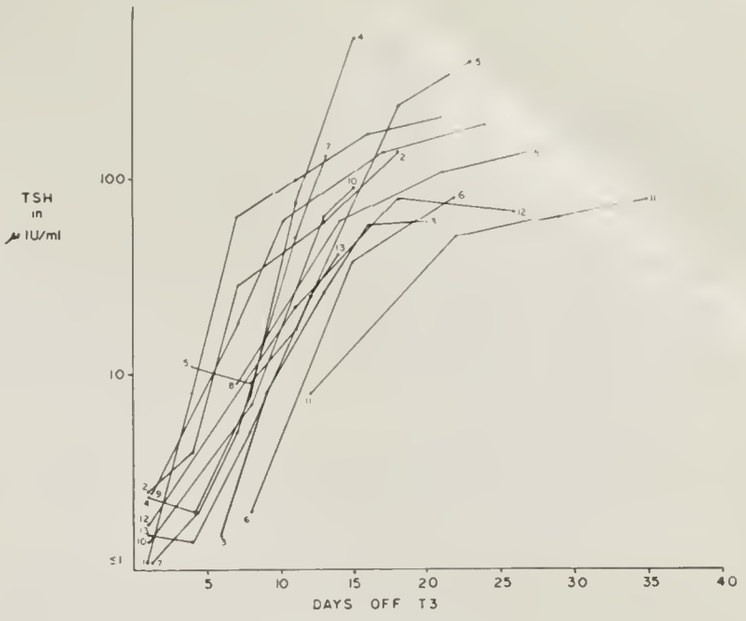


Figure 2
TSH levels after T_3 withdrawal: individual curves

tumor tissue.[11] Long intervals off thyroid hormone are associated with symptomatic hypothyroidism, often unacceptable to the patient. We have recently described a protocol wherein 75-100 mcg of tri-iodothyronine (T_3) daily is substituted for T_4 or DT for one month in athyreotic patients with thyroid cancer.[12] Following interruption of T_3 therapy, a progressive rise in circulating TSH levels occurs in all patients, with TSH levels greater than 50 uIU/ml ten to fourteen days after T_3 withdrawal (Fig. 2). This modification of replacement hormone therapy avoids an unnecessarily long period of hypothyroidism and permits effective isotope scanning and treatment of all patients. Utilizing this treatment protocol, we have found patient compliance to be excellent even when repeat ^{131}I scanning and therapy is required for patients with functioning metastatic disease.

Based on these observations, we recommend the following protocol for diagnostic scanning and isotopic treatment of patients with thyroid cancer: Following a maximal thyroidectomy, plasma TSH is monitored during abstinence from replacement therapy at weekly intervals. When TSH levels are greater than 30 uIU/ml, generally four to five weeks after surgery, 30 mCi of ^{131}I is administered. This dose of isotope ablates residual normal thyroid tissue in the neck, usually demonstrable even after a total thyroidectomy.[13] Functioning metastases are occasionally detected at this time on the post treatment scan. The patient is then placed on T_4 at a dose calculated to fully suppress TSH secretion, generally at least 200 mcg daily. A second scan is performed in three months, utilizing the T_3 protocol described above. A scanning dose (5 mCi) of ^{131}I is administered after TSH levels are 50 uIU/ml or higher, usually ten to fourteen days following T_3 withdrawal. If the total body scan is normal, the patient resumes T_4 therapy. If the scan demonstrates residual disease, 100-150 mCi of ^{131}I is administered under standard radiation precautions. This schedule is followed at three to six month intervals while lesions are demonstrable, is delayed for twelve months once the scan is normal and is repeated at variable intervals thereafter, depending on the malignant potential of the tumor. In patients with indolent disease, scans are performed at three to five year intervals once a total body scan is negative. In patients with functioning metastases, ^{131}I scanning and treatment is repeated every three to six months until all residual disease is ablated.

Concern has been expressed about the efficacy and safety of ^{131}I for the treatment of thyroid cancer.[14] While some thyroid cancers do not concentrate ^{131}I, the majority of follicular or mixed papillary-follicular cancers will concentrate this isotope in the presence of high circulating levels of TSH. It has been shown that ^{131}I therapy significantly decreases the recurrence rate of thyroid cancer.[8] Cumulative doses of up to 1200 mCi of ^{131}I for aggressive disease have been associated with minimal morbidity or mortality.[7] Based on historical experience, ^{131}I is the most effective treatment available for patients with functioning metastatic thyroid cancer.

Inadequate pretreatment surgery is the most common cause of ^{131}I treatment failure. If a total thyroidectomy is not performed, considerable time and a large amount of isotope are required to eliminate normal thyroid tissue and permit detection and treatment of functioning metastases. Thus, whenever feasible, a total

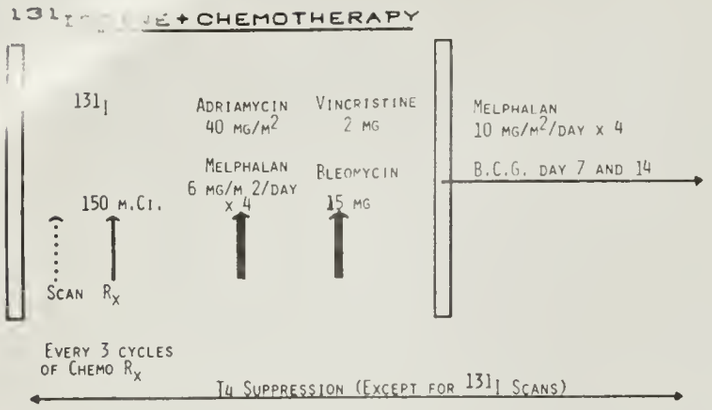


Figure 3
Multimodality chemotherapy and radioiodine therapy for high risk thyroid carcinoma. Details are given in the text. ^{131}I refers to treatment dose (100-150 mCi) every three months if functioning tissue present. Chemotherapy is administered in 28 day cycles with adriamycin on day 1, malphalan days 3 to 6, vincristine and bleomycin day 14. T_4 suppression is oral L-thyroxine 0.2 to 0.4 mg/day.

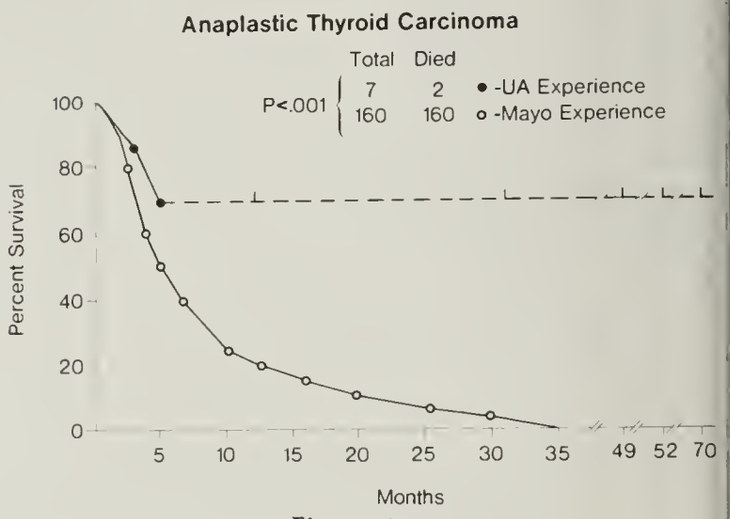


Figure 4
Kaplan-Meier survival plot for University of Arizona (UA) patients with anaplastic thyroid carcinoma compared with the published experience from the Mayo Clinic (Mayo; see reference 6) The survival is expressed in months. Living patients are marked (1) in the UA survivial plot.

thyroidectomy should be performed so that treatment of functioning metastases is not delayed and unnecessary radiation exposure is avoided. As discussed earlier, tumor tissue generally concentrates ^{131}I only in the presence of elevated TSH levels, so that functioning metastases often remain undetected after brief periods of interrupted hormone therapy. Some thyroid cancers fail to concentrate ^{131}I and require other diagnostic techniques such as soft tissue Xrays or computed tomography to permit their detection. Finally, an inadequate treatment dose of ^{131}I (less than 100 mCi) may contribute to ^{131}I treatment failure.

High radiation doses are delivered locally by ^{131}I without the constraints in dose that limit external beam radiotherapy.[15] The beta particles emitted by ^{131}I have a range of 1-3 mm in soft tissue. High tissue radiation doses permit successful treatment of microscopic non-functioning disease if such disease is radiosensitive and proximate to functioning tumor or normal tissue. Eradication of non functioning thyroid cancer with ^{131}I was recently demonstrated in a patient with medullary carcinoma and residual microscopic disease following a total thyroidectomy.[16] Elevated levels of TCT returned to normal following a treatment dose (150 mCi) of ^{131}I, suggesting that this isotope had delivered sufficient radiation to normal residual follicular tissue in the neck to destroy all non functioning tumor cells located in the proximate area.

We have recently described a new multimodality chemotherapy protocol for the treatment of anaplastic and highly invasive follicular carcinoma,[17] utilizing adriamycin, melphalan, vincristine and bleomycin, agents that are known to act synergistically against a variety of soft tissue tumors.[18, 19] The treatment protocol is shown in Fig. 3. Surgery, generally palliative, is followed by a scan after bovine TSH, 10 units intramuscularly for three consecutive days. If follicular tissue is present in the neck, a therapeutic dose of ^{131}I (100-150 mCi) is administered to radiate thyroid cancer cells adjacent to functioning glandular tissue. A total of four treatment doses of ^{131}I are administered at three month intervals. Prior to or following the initial dose of ^{131}I, chemotherapy is started in monthly cycles. Adriamycin 40 mg/kg is administered intravenously on the first day, melphalan 6 mg/m /day p.o. on days 3 to 6 inclusive, vincristine 2 mg intravenously and bleomycin 15 mg intramuscularly on the fifteenth day of each cycle. The chemotherapy cycle is repeated every 28 days for a total of eight cycles. Melphalan is continued at monthly intervals for an additional year after multimodality chemotherapy has been completed.

Patients considered to have high risk thyroid cancer were selected for treatment with this combination of antitumor agents. This group consisted of seven patients with anaplastic carcinoma, five patients with highly invasive follicular carcinoma (mixed follicular-anaplastic carcinoma with significant vascular invasion and local extension of tumor into extranodal soft tissue in the neck), and two patients with anaplastic conversion of previously treated papillary carcinoma who demonstrated rapid growth of tumor, soft tissue invasion, extranodal disease and advanced age.[20] Based on clincial evaluation, these patients were classified as having life threatening disease.

Table 1
Anaplastic Thyroid Carcinoma
Clinical and Histologic Features; Response and Survival in 7 Patients

Age	Sex	Histology (Cell Type)	Extent of Disease	Surgery	^{131}I mCi	Thyroid Replacement Therapy	Response	Survivial in Months
76	F	Small	Massive local disease; vascular/ soft tissue invasion	ST* PND*	300	Yes	CR†	52+
64	F	Small	Moderate local disease; muscle invasion	ST PND	150	Yes	CR	31+
72	F	Small	Massive local disease; invasion of esophagus	B*	0	Yes	CR†	45+
28	F	Clear	Massive local disease; invasion of nodes, esophagus, trachea, muscle	B	750	Yes	CR‡	70+
76	F	Clear	Massive local disease; perforation of esophagus, invasion of esophagus, left jugular vein, recurrent laryngeal nerve	ST	100	Yes	PR	12+
72	F	Spindle	Massive local disease; invasion of trachea and soft tissues	ST	0	Yes	NR§	6
48	F	Spindle	Massive local disease; involvement of trachea, muscle, esophagus; extension into mediastinum	ST	0	Yes	PR	8

* ST = Subtotal of near-total thyroidectomy.
PND = Positive node dissection
B = Biopsy only
† CR = Complete response
PR = Partial response; >50% tumor regression
NR = No response or progressive disease
‡ Has had tiny focus of uptake on ^{131}I scan unchanged for >30 months.
§ Incomplete chemotherapy schedule.

Seven patients with anaplastic carcinoma have been treated. All are female; ages range from 27 to 72 years. A total thyroidectomy was not feasible in any patient. Only four had evidence of ^{131}I uptake in residual normal thyroid tissue, permitting ^{131}I treatment in addition to chemotherapy. Table 1 lists the extent of soft tissue invasion in each patient. Fig. 4 shows the response to treatment in this group. Four patients have undergone complete remission and remain entirely free of disease, as based on careful clinical examination, soft tissue Xrays, computed tomography and bleomycin scan, four to six years after initiation of therapy. A fifth patient has recently completed treatment and, twenty months after initiation of chemotherapy, has a small area of nodularity and induration remaining in the neck. Two patients have died, one five and one seven months after initiation of treatment. Thus, four and possibly five of seven patients with anaplastic carcinoma have experienced a complete remission of their disease 20-75 months following initiation of multimodality chemotherapy.

Seven patients with highly invasive follicular or undifferentiated papillary disease have been treated. Three are men and four are women. Of the seven patients, six had sufficient ^{131}I uptake in normal or tumor tissue following TSH stimulation to permit ^{131}I therapy in addition to multimodality chemotherapy. Table 2 outlines the extent of disease in these patients. The four patients classified as having "limited disease" had tumor invasion of muscle, carotid sheath, skin, trachea and recurrent laryngeal nerve. ^{131}I scan of the neck demonstrated that most of this tumor tissue was non functioning. All four patients have experienced complete remission of their disease following multimodality chemotherapy and ^{131}I treatment, and two are in remission more than five years following completion of therapy (Fig. 5). Three patients classified as having "advanced disease" had, in addition to extensive local disease in the neck, metastases to bone, lung, brain, spinal cord, liver and pleura. Two of these three patients were referred with tracheostomies and feeding gastrostomies. These three patients have experienced only partial remission, and one has died from complications of metastases to brain and spinal cord. Thus, the response to chemotherapy of patients with invasive follicular or papillary disease is less satisfactory than the response of patients with anaplastic disease, with remission dependent in large measure on the extent of dissemination of disease at the time chemotherapy is initiated.

Complications of chemotherapy were mild and well tolerated. Alopecia was encountered in most patients

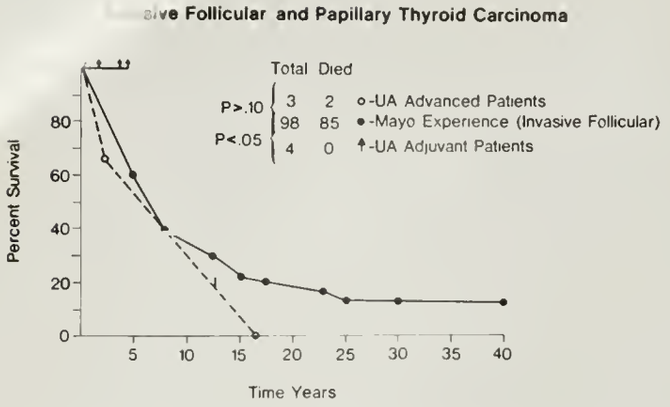


Figure 5
Kaplan-Meier survival plot for University of Arizona (UA) patients with both limited ("adjuvant" group) and advanced invasive follicular carcinoma, compared with the Mayo Clinic experience (Mayo), as reported by Woolner et al.[6]

during adriamycin therapy. A new treatment protocol, wherein ice is applied to the scalp during and immediately following each course of adriamycin, is now under investigation and appears to limit hair loss consequent to adriamycin therapy.[21] Cardiotoxicity was prevented by limiting the dose of adriamycin, careful monitoring of each patient during the period the drug was adminstered and avoiding adminstering the drug during periods of transient hypothyroidism preceding ^{131}I therapy. Myelosuppression has been mild to moderate. On occasion one to two weeks of additional time between treatment courses was required due to transient myelosuppression, but all patients have completed therapy. Bleomycin occasionally produced fever, readily treated with Tylenol. Vincristine produced mild neuropathy, asymptomatic in most patients. Cumulative doses of ^{131}I produced transient salivary gland swelling and tenderness responsive to salicylate

Table 2
Invasive Follicular and Papillary Thyroid Carcinoma
Clinical and Histologic Features; Response and Survival in 7 Patients

Age	Sex	Histology	Extent of Disease	Surgery	^{131}I mCi	Thyroid Replacement Therapy	Response	Survival In Months
1. **Limited Disease**								
40	M	Follicular; marked vascular invasion	Local in neck; lymph node involvement, muscle invasion	ST* PND*	450	Yes	CR†	45+
20	M	Follicular; marked vascular invasion; clear cell anaplastic elements	Local in neck; lymph node, muscle, carotid sheath, skin involvement	ST PND	300	Yes	CR	56+
56	F	Follicular; marked vascular invasion; poorly differentiated; *clear cell anaplastic elements*	Local in neck; extra-capsular soft tissue invasion	ST	150	Yes	CR	11+
65	F	Papillary elements; *predominantly undifferentiated* with marked vascular invasion	Local in neck, *however,* extensive invasion of muscles, trachea, recurrent laryngeal nerve	ST‡	150	Yes	CR	11+
1. **Advanced Disease**								
78	F	Follicular; extremely marked vascular invasion	Neck plus extension into lung	Initial lobectomy	30	Yes	PR	25§
65	F	Follicular; marked vascular invasion	Widespread disease; lungs, bone, brain	Initial lobectomy	300	No \|	PR	13 \|
65	M	Papillary; mixed undifferentiated elements	Neck plus lungs - pleural infusion	Initial lobectomy	150	Yes	PR	4‡

* ST = Subtotal thyroidectomy
PND = Positive node dissection
B = Biopsy only
† CR = Complete response
PR = Partial response; >50% tumor regression
NR = No response or progressive disease
‡ Definite residual disease post-operatively
§ Relapsed off chemotherapy and subsequently died of complications
\| Relapsed off thyroid replacement therapy
17 years between initial lobectomy and presentation with metastatic disease.

therapy and, on occasion, permanent alteration of taste threshhold.

Based on this cumulative experience, it would appear that a multidisciplinary approach to the treatment of thyroid cancer provides important benefits for the patient. By combining the skills of the several specialists involved in the care of these patients during the initial planning of therapy and subsequent diagnostic studies and treatment of residual or metastatic disease, rational treatment can be designed that is appropriate for each patient. Patients with indolent disease avoid unnecessarily invasive therapy, whereas combined surgery, radioisotope and multimodality chemotherapy early in the treatment of aggressive and life threatening disease substantially reduces mortality and provides these patients the opportunity for normal, healthy and productive lives.

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Seminars in Gastroenterology and Liver Disease

Cancer and Ulcerative Colitis

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Cancer of the colon has long been recognized as a significant complication of chronic ulcerative colitis. The reported incidence has varied widely among observers. This variation probably depends on the population of patients observed in any given series. Overall, the incidence is approximately 3-4% of all ulcerative colitis patients diagnosed. This overall figure however, does not adequately describe the risk of a given patient at a given time. A patient who is seen 15 to 20 years after the initial diagnosis is at much higher risk of having cancer than a patient who is seen within 5 years of onset of disease.

The factors described as contributing to the likelihood of developing cancer of the colon include the following:

a. Age of onset of colitis
b. Duration of colitis
c. Extent of colitis
d. Clinical course (?)
e. Presence of epithelial dysplasia

The age of onset of colitis has been noted by many to be a factor in determining the risk of carcinoma. The younger the patient is at the time of diagnosis, the more likely that patient is to develop cancer. Devroede, et al[1], did an actuarial analysis of survival in 396 children seen at the Mayo Clinic between the years of 1919 and 1968. Although the incidence was only 3% in the first decade of disease, this rate went up rapidly after that by approximately 20% per decade. At the end of 35 years 43% of the patients at risk had developed carcinoma Other observers would argue however, that the risk is not higher in children and the apparent increased risk only reflects the longer period of follow-up in these patients.

Duration of colitis is clearly an important risk factor and on this point everyone is in agreement. Although cancer of the colon can occur within the first 10 years of disease, the risk in subsequent decades is substantially higher.

The extent of colitis is also important. Malignant complications occur uncommonly in patients with either ulcerative proctitis or proctosigmoiditis. Patients with total colonic involvement are at the greatest risk. The incidence of carcinoma occurring in patients with left-sided colonic disease is difficult to evaluate. Barium enema greatly underestimates the extent of disease in patients and it is difficult to interpret reports which define involvement only by x-ray appearance. My personal opinion is that the vast majority of patients who appear to have only left-sided colitis have total colitis when evaluated by colonoscopy.

The clinical course of the disease is reported by some to be a factor.[2] It is felt by these observers that patients with chronic continuous disease are more likely to develop cancer and this may be the reason children are more likely to develop carcinoma since childhood disease

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s frequently more severe. This however, is a disputed factor and cancer may certainly be seen in patients with quiescent disease.

In 1967, Morson and Pang,[3] reintroduced the concept of epithelial dysplasia. These findings on rectal or colonic biopsy have been shown on multiple occasions to be associated with increased risk of carcinoma.[4-6]

In summarizing the data from multiple series dealing with epithelial dysplasia, Dr. Dobbins determined that pre-cancer (epithelial dysplasia), was present in 88% of colectomy's in which cancer was found. On the other hand, in patients who had colectomy for severe ulcerative colitis who were not found to have carcinoma, only 13% of these patients had epithelial dysplasia. What is the likelihood of a patient having carcinoma of the colon when epithelial dysplasia is found on rectal or colonic biopsy? This is a very difficult figure to derive since not all patients who have been found to have epithelial dysplasia have been subjected to colectomy and follow-up data is not always available. It would seem however, that a patient who has epithelial dysplasia on rectal or colonic biopsy has approximately a 30-40% chance of having colonic carcinoma.[7]

Symptoms unfortunately, are not helpful in evaluating the possibility of carcinoma since they may often mimic an acute attack of colitis. Perhaps of some help is the presence of rectal bleeding in the absence of other symptoms of an acute attack such as diarrhea or tenesmus. A change in stool pattern toward constipation would also be helpful but this is almost always a very late sign of disease.

Some special features of carcinoma occurring in ulcerative colitis need to be emphasized. 1) Early onset of carcinoma compared to cancer of the colon in non-colitics. Whereas the average age of patients without ulcerative colitis developing cancer is 57.8 years,[8] the average age was 41 years in a large group of ulcerative colitis patients.[2] 2) Cancer of the colon seems to be more aggressive with a markedly decreased five-year survival. 3.) Tumors are often difficult to detect grossly. Many of the tumors that occur in ulcerative colitis appear as flat lesions or perhaps strictures. Although not all strictures of the colon in ulcerative colitis indicate the presence of carcinoma, as many as 1/3 may represent cancer. Indeed, detection of cancer of the colon in ulcerative colitis may be difficult even under direct inspection at colonoscopy. Multiple biopsies need to be taken by the colonoscopist of any suspicious lesion and even then, the biopsies may not be deep enough to detect a submucosal lesion. 4) Tumors are frequently multiple. The frequency of multiple tumors in ulcerative colitis is 4-5 times as high as carcinomas observed in otherwise normal colons. 5) Rectal involvement not as likely. Carcinoma of the colon in ulcerative colitis is less likely to involve the sigmoid and rectum in patients with ulcerative colitis vs general population.

Methods of following patients in the past have been poor in the early detection of cancer. Patients with ulcerative colitis are likely to have hemoccult positive stools even during quiescent periods of disease. Sigmoidoscopy at yearly or 6-month intervals could be expected to detect only 40% of those patients developing carcinoma. Annual barium enema was used by some clinicians, particularly after 10 years of disease. Drawbacks of the yearly barium enema examination included exposure to radiation, inability to detect many early lesions, and the fact that patients with ulcerative colitis often tolerated barium enema poorly. Frustration due to our inability to detect early carcinoma in patients with ulcerative colitis led many clinicians to recommend total colectomy after 10-15 years of disease.

Our ability to determine which patient with chronic ulcerative colitis have or will develop carcinoma still seems inadequate. However, the recent literature is now strongly suggesting that finding epithelial dysplasia in a patient with ulcerative colitis places him at substantial increased risk, The ability of colonoscopy to obtain multiple biopsies from all portions of the colon and to directly visualize the lining of the bowel has greatly increased our diagnostic capabilities for early detection of cancer.

Based on these abilities, a number of possible follow-up recommendations can be made for the detection of cancer in patients with ulcerative colitis. My personal recommendations are as follows:

Less than 8 years of disease:

a. sigmoidoscopy at yearly intervals with rectal biopsy
b. barium enema every 3-4 years.
c. colonoscopy at 5 years of disease.

Greater than 8 years of disease:

a. yearly sigmoidoscopy with biopsy
b. colonscopy with multiple colonic biopsies every 2 years.
c. barium enema every 3-4 years.

If dysplasia is found on any of the biopsies, sigmoidoscopy intervals are increased to every 6 months and colonoscopy to yearly.

If severe dysplasia is found in the absence of acute inflammation, colectomy should be considered, particularly if the dysplasia is found at more than one site and if found on sequential examinations.

Certainly epithelia dysplasia does not clearly define all patients with ulcerative colitis at increased risk for developing cancer. Many patients with dysplasia do not have cancer and a few who develop carcinoma do not exhibit the finding. More sensitive and reliable screening methods still need to be found.

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Obstetrics and Gynecology

Preventing RH Hemolytic Disease

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Rh_o (D) immune globulin (trade names - Gamulin Rh, HypRh_oD, Rh_o Gam) was released in 1968 to be utilized in preventing sensitization of the Rh negative mother to blood from her Rh positive fetus. By utilizing this immune globulin, the incidence of maternal sensitization has decreased to 10% of the level prior to 1968. In well controlled clinical situations, the current incidence of maternal sensitization is less than 1% of the total population of Rh neg women in the reproductive age. Unfortunately, this dramatic decline in sensitization to the Rh antigen is not occurring nationally. This has resulted in continued fetal morbidity and mortality from erythroblastosis fetalis (hemolytic disease of the newborn).

It is of utmost importance that all patients registering for a prenatal clinic have a blood type, Rh factor and antibody determination performed. The latter is necessary in all patients regardless of Rh type for two reasons. The first is that approximately 2% of erythroblastosis fetalis is caused by irregular antibodies other than anti-D. The second is that all pregnant patients are potential blood recipients and the blood bank must be prepared for possible difficulty in crossmatching blood for transfusion.

The recognition of the patient who should receive the globulin is a key factor in decreasing the incidence of sensitization. It is at this point that education of the physician practicing obstetrics can have its greatest impact.

The following are the major candidates for the immune globulin: they are all Rh-negative unsensitized women who 1) deliver an Rh-positive baby; 2) have either an induced or a spontaneous abortion; 3) have an ectopic pregnancy; 4) undergoing amniocentesis for any reason with delivery being delayed more than 72 hours. There are several other theoretical indications for immune globulin administration but these will not be discussed. The immune globulin should be given within 72 hours of the precipitating event, although it is most probably effective if given after this time period. The critical time when the drug is no longer effective is not known.

Approximately 20% of patients in the United States who are candidates for immune globulin are currently not receiving the drug. The largest group are those undergoing spontaneous or induced abortion and the most common reason is lack of blood typing. Not only is this detrimental to the woman and her future reproductive potential, it is inappropriate medical practice and places the physician in a serious legal situation.

If an antibody to the D antigen is detected during the screening process of the Rh negative patient, this documents sensitization and eliminates this patient as an immune globulin candidate. Unfortunately, sensitization of the patient is irreversible.

Several important points need to be stressed for the proper use of immune globulin. First, it must be repeated with each successive precipitating event. Differing from other immunizations, its effect is not long lasting and therefore it must be repeated. Second, and of most importance, is the fact that if one is in doubt whether to administer the globin, always err on the side of administering the drug. Although not scientific, it may be of benefit to the patient with no significant harm.

The incidence of Rh disease can be markedly decreased with compulsive attention to detail by the physician practicing obstetrics. The scientists have given us the necessary drug and we must be diligent in its use.

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Oncology

Stage I Cancer of the Endometrium

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Adenocarcinoma of the endometrium is now the most common malignancy of the female pelvis, with an estimated 27,000 new cases of uterine corpus cancer being diagnosed each year. Despite the fact that the majority of these cases are in clinical Stage I, 3,700 women will die each year from metastatic uterine adenocarcinoma.

The management of Stage I carcinoma of the endometrium remains controversial. (See Table 1 for FIGO [International Federation of Gynecology and Obstetrics] staging criteria.) Total hysterectomy with bilateral salpingo-oophorectomy remains the primary treatment of choice. Although most authors would agree that adjunctive radiation therapy is required for patients with moderately or poorly differentiated lesions (and in some selected patients with well-differentiated lesions), the controversy centers around both the type of radiation therapy that should be used and whether it should be given preoperatively or postoperatively.

Joelsson[1] and others from Sweden would advocate preoperative uterine packings along with a vaginal cylinder or vaginal plaque as the modality for radiation therapy, while Underwood[2] and many other American gynecologic oncologists would favor the use of an intrauterine tandem and vaginal ovoids preoperatively with preoperative external radiation therapy for poorly differentiated lesions. On the other hand, Creasman et al[3] now favor operative staging of endometrial cancer to assess the extent of disease and then postoperative prescription of the radiation therapy.

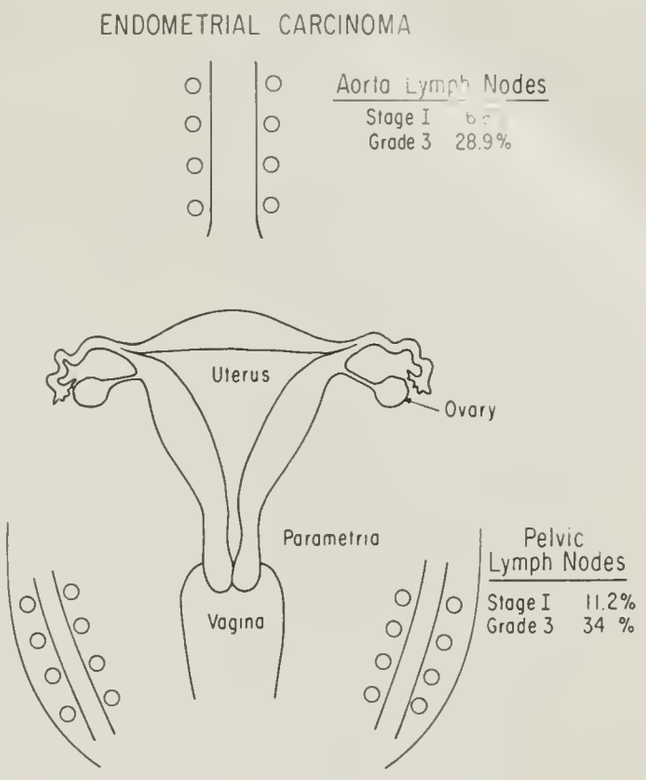


Figure 1
Morphologic pattern of endometrial carcinoma and incidence of nodal metastases (All Stage I and Stage I Grade 3 only.)

In order to come to legitimate conclusions as to the optimal management for Stage I carcinoma of the endometrium, we must look at the field at risk and spread patterns for this disease process. (See Figure 1.)

The uterus, of course, is at primary risk as the site of origin of the malignancy and is usually removed surgically. In approximately 10% of patients with Stage I disease, there is adnexal involvement with tumor, and, as a consequence, the ovary and tubes are usually also removed at the time of definitive surgery. The vagina (particularly the upper vagina) is at risk for the development of recurrent disease with adenocarcinoma of the endometrium. If no adjunctive radiation therapy is utilized in this area, approximately 14% of patients with Stage I disease will have a vaginal recurrence. However, the incidence of recurrent disease at this site can be decreased to approximately 3% - 4% by the utilization of either preoperative or postoperative radiation to the vaginal cuff. The development of vaginal recurrences may be correlated with the differentiation of tumor in Stage I disease. With Grade 1 and Grade 2 lesions, the incidence of vaginal recurrence is approximately 5%, whereas with poorly differentiated lesions, the incidence is approximately 15%. The depth of myometrial invasion in the uterine specimen may also be correlated with the likelihood of developing recurrence in this area—there is a 3%-4% incidence of

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Table 1
Stage 1 - FIGO (1970)

Carcinoma Confined to the Corpus:
Stage I - Uterine cavity 8 cm. or less
Stage II - Uterine cavity greater than 8 cm.

Differentiation:
Grade 1 (G1) - Highly Differentiated Adenomatous Carcinoma
Grade 1 (G2) - Differentiated Adenomatous Carcinoma with solid areas
Grade 1 (G3) - Predominantly solid or entirely undifferentiated carcinomas

vaginal recurrence with either no myometrial or superficial invasion and approximately a 15% incidence with deep myometrial invasion.[4]

The depth of myometrial invasion in the uterine specimen also correlates very well with survival in Stage I disease and relates to the probability of pelvic lymph node metastases. The survival as it relates to the degree of uterine involvement for Stage I endometrial cancer can be seen in Table 2, decreasing from a 5-year 98% survival with endometrial involvement only to a 65% 5-year survival with the presence of deep myometrial invasion.[5] Table 3 documents the extent of uterine involvement as it correlates with the incidence of pelvic and para-aortic node involvement in Stage I endometrial cancer. Again, there is only a 3% incidence of pelvic nodal involvement when only the endometrium is involved increasing to 46% with deep myometrial invasion.[3]

The differentiation of tumor also plays an extremely important role in survival for Stage I carcinoma of the endometrium as can be seen in Table 4 with a 90% five-year survival for well-differentiated lesions decreasing to 50% for the more poorly differentiated lesions.[6] This is clearly a separate prognostic factor unto itself as can be seen in Table 5 with a five -year survival as correlated for grade when only the endometrium is involved with tumor in Stage I disease. This also correlates very closely with the probability of pelvic nodal involvement as can be seen in Table 6. There is a negligible incidence of involvement of pelvic nodes in Stage I, Grade 1 carcinoma of the endometrium increasing to greater than one third of patients with Stage 1, poorly differentiated carcinoma of the endometrium.

The size of the uterine cavity is incorporated into the staging system in early stage carcinoma of the endometrium as can been seen from Table 1. However, recent data would tend to indicate that of all the prognostic factors, the size of the uterine cavity is the least reliable. This is due to the fact that the uterus may be enlarged for reasons other than carcinoma, such as uterine fibroids. However, a recent collaborative study by the Gynecologic Oncology Group has shown a difference in nodal involvement between Stage IA, G3, and IB, G3. This, however, would take into consideration the fact that when the uterus is enlarged in anaplastic Stage I carcinoma of the endometrium, it is more likely to be secondary to tumor and this would

Table 2
Stage I Carcinoma of the Endometrium

Extent of Uterine Involvement	5-Year Survival
Endometrium only	98%
Superficial Myometrial Invasion	90%
Deep Myometrial Invasion	65%

Table 3
Maximum Invasion of the Uterus and Frequency of Node Metastasis

Maximum Invasion	Pelvic	Aortic
Endometrium Only	3%	1%
Superficial Muscle	8%	7%
Intermediate Muscle	13%	7%
Deep Muscle	46%	29%

Table 4
Stage I Carcinoma of the Endometrium

Differentiation	5-Year Survival
Grade 1	90%
Grade 2	76%
Grade 3	50%

Table 5
Histologic Grade and 5-year Survival
(Invasion of endometrium only)

Grade	Survival
I	95%
II	93%
III	63%

Table 6
Grade VS. Frequency of Positive Pelvic and Aortic Nodes

Grade	Pelvic	Aortic
G1	3%	2%
G2	10%	4%
G3	36%	28%

Table 7
Stage I endometrial Carcinoma
Therapeutic Evaluation

1) Uterus
 Myometrial Invasion
 Tumor Differentiation
 Cervical Involvement
2) Para-aortic Lymph Nodes
3) Peritoneal Washings
4) Endometrial Receptors
 (Analysis available at AHSC)

have a direct correlation with the volume of tumor present. The more extensive the involvement of the uterus, the more likely the involvement of pelvic lymph nodes.

One of the key areas of potential spread for Stage I carcinoma of the endometrium certainly is the pelvic lymph nodes; however, the likelihood of tumor being present in the lymph nodes of the pelvis and the requirement for treatment with external radiation therapy can be predicted extremely well on the basis of the differentiation of the tumor and the degree of uterine involvement or depth of myometrial invasion, as has been demonstrated from the above data. As a consequence, there is no need to surgically sample these nodes to determine the requirement for the external radiation therapy.

Stage I carcinoma of the endometrium also has the potential to spread to para-aortic lymph nodes, both directly through ovarian lymphatics or indirectly through pelvic lymphatic channels. However, clinical experience has shown that the vast majority of patients who have para-aortic nodal involvement also have pelvic nodal involvement. Because of the morbidity associated with the treatment required for patients with positive para-aortic lymph nodes, one cannot empirically select these patients according to the same criteria delineated for treating pelvic lymph nodes with external radiation therapy as described above. Fortunately, the only patients with a clinically significant incidence of para-aortic nodal involvement are those with poorly differentiated lesions, as can be seen from Table 6. As a consequence, one should sample the para-aortic lumph nodes in patients with Stage I, Grade 3 carcinoma of the endometrium to best individualize and prescribe therapy postoperatively for these patients.

Another area of risk for potential spread of carcinoma of the endometrium is the peritoneal cavity, and, as a consequence, it is obligatory to obtain peritoneal washings at the time of opening the abdominal cavity. Creasman et al[7] have found a 16% (22/137) incidence of positive peritoneal cytology in Stage I carcinoma of the endometrium. Nearly one half of these patients later developed abdominal recurrences. Even more impressive is the fact that of the 12 patients with Stage I disease and positive peritoneal cytology who did not have extrauterine spread, lymph node involvement, or deep myometrial invasion at the time of laparotomy, five also developed abdominal recurrences, which would lead one to believe that the peritoneal cytology is a separate prognostic factor by itself.

The extension of carcinoma to the cervix increases the likelihood of pelvic nodal spread to approximately 30%, and, as a consequence, these patients all require external radiation therapy. The management of Stage II carcinoma (cervical involvement) will be the subject of a future presentation. The assessment of endometrial receptors of both estrogen and progestational types plays an important role in delineating therapy both for high-risk patients with Stage I disease and those patients who develop recurrent disease. This also will be a subject of another future presentation in this series.

Table 8
Treatment Stage I Endometrial Carcinoma

Stage*	Treatment
IAG1 IBG1 IAG2 IBG2	A) TAH BSO B) Peritoneal Washings
IAG3 IBG3	A) Preoperative Heyman Packings and Vaginal Ovoids x 2 B) TAH, BSO C) Para-aortic Lymph Node Sampling (4-weeks after radiation)

*FIGO (1970) see Table 1.

Table 9
Postoperative Treatment

Superficial Myometrial Invasion Vaginal ovoids (4-6 weeks), 7,000 R surface dose to vaginal cuff
Deep Myometrial Invasion 5,000 R whole pelvis radiation therapy
Positive Peritoneal Washings 15 Millicuries P-32 (intraperitoneal)

Table 10
Postoperative Treatment
Positive Para-aortic or Common Lymph Node Sampling

1) Add para-aortic portal for postoperative radiation therapy
2) Progestational therapy if estrogen and progesterone receptors positive
3) Adriamycin chemotherapy if receptors are negative.

The therapeutic evaluation of Stage I carcinoma of the endometrium as we have discussed is summarized in Table 7. The treatment planning for Stage I carcinoma of the endometrium can then be delineated on the basis of the information gleaned from the above data obtained at the time of surgery. The treatment protocol is delineated in Tables 8, 9, and 10. Since the likelihood of para-aortic lymph node involvement is small with well- and moderately well-differentiated carcinomas of the endometrium, the only surgical procedure that is required for these patients is a total abdominal hysterectomy and bilateral salpingo-oophorectomy; however, for those patients with poorly differentiated Stage I carcinoma of the endometrium, it is essential that

para-aortic lymph nodes be evaluated. In addition, due to the high likelihood of pelvic nodal involvement for Stage I poorly differentiated carcinomas of the endometrium and the overall poor survival without any adjunctive radiation therapy, some form of radiation is required for all patients with Grade 3 lesions. This can be either in the form of external radiation therapy (whole pelvic) or Heyman packings; however, there is data generated by Langren et al[8] at M. D. Anderson Hospital that would now indicate that the use of preoperative Heyman packings, as compared to external radiation, leads to an overall improved survival in all grades of Stage I carcinoma of the endometrium, especially poorly differentiated Stage I carcinoma of the endometrium. It is of great interest that even the incidence of distant recurrences in Stage I, grade 3 lesions is less with the use of preoperative Heyman packings as compared to external radiation therapy. A recent study by Surwit et al[9] from the Radiumhemmet in Stockholm demonstrated a 90%, 5-year survival in an unselected group of patients with Stage I, Grade 3 carcinoma of the endometrium utilizing preoperative Heyman packings. Only 12% of these patients required whole pelvic radiation postoperatively for deep myometrial invasion with viable tumor. This data was also confirmed analyzing the experience at the University of Umea in Sweden where a 91% survival was documented with anaplastic Stage I disease utilizing Heyman packings. These results are far superior to any others reported for Stage I, Grade 3 carcinoma of the endometrium. In addition, the morbidity of preoperative Heyman packings is definitely less than that of external radiation therapy. Therefore, the protocol as seen in Table 8 advocates the utilization of two preoperative Heyman packings with Stage I, Grade 3 carcinoma of the endometrium. Because of the high incidence of vaginal recurrences with anaplastic lesions, all of these patients also receive preoperative treatment to the vaginal cuff with vaginal ovoids concomitantly at the time of one of the Heyman packings.

The postoperative therapy as can be seen from Table 9 for all patients is based on the operative and pathological findings. In patients with well- or moderately well-differentiated lesions who have no myometrial invasion whatsoever, no further therapy is required. In those patients who have deep myometrial invasion, 5,000 rads of whole pelvic radiation therapy is given both to treat the pelvic lymph nodes and as prophylaxis for the prevention of vaginal recurrences. Although it has been traditional in the past to add a single vaginal ovoid application to the external radiation therapy in these patients, we feel that a dose of 5,000 rads is more than adequate to either treat microscopic disease or prevent these recurrences. Those patients with poorly differentiated lesions who have viable deep myometrial invasion receive external pelvic radiation adjusted to the preoperative intracavitary therapy. The patients with well- and moderately well-differentiated lesions who have only superficial myometrial invasion are treated with postoperative vaginal ovoids for a surface dose of 7,000 rads at 6 weeks (postoperatively). This usually represents one 72-hour application.

Any patient who is found to have malignant cells in the peritoneal washings receives 15 millicuries of intraperitoneal radioactive phosphorous postoperatively. Although this is an innovative treatment approach to this problem, a review of the clinical experience in early stage ovarian carcinoma would speak to the efficacy of radioactive colloids in treating the peritoneal cavity, which would also seem to be at risk in patients with carcinoma of the endometrium who have malignant cytology.

Those patients who have positive para-aortic nodes with Stage I carcinoma of the endometrium and poorly differentiated lesions are at extremely high risk for developing recurrent disease. The para-aortic area itself is treated with 4,500 rads of para-aortic radiation to control disease in this area. However, once there is evidence of involvement of para-aortic nodes, one can assume that the disease is systemic, and as a consequence, systemic therapy is required. Those patients who have had receptor status evaluated and are receptor positive are treated with progestational therapy. However, since the likelihood of response to progestational therapy is extremely low in patients who are receptor negative, these patients are treated with cytotoxic chemotherapy (Adriamycin) as adjunctive therapy. If the receptor status has not been assessed, then these patients are all treated with progestational therapy.

This individualization of therapy outlined for all patients, with an aggressive approach for patients with high-risk disease, should produce a 90%-95% 5-year survival for Stage I carcinoma of the endometrium.

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Consumer Attitudes Toward Physicians and Health Care

Stephen W. Brown

What opinions do people have of physicians? Do they feel the same way about their own doctor? What is the nature of the patient-doctor relationship? What does the public think about health care? These are some of the major questions addressed in this article.

This article is the second of a five-part series. Throughout the series, consumer and physician attitudes toward physicians, health care, and medical malpractice are explored.[1] The primary goal of this article is to contribute to better understanding between physicians and patients. Doctors should know, and want to know, what their patients are thinking. Too often, time pressures prevent the patient and doctor from talking about many of the subjects that are of interest to both. The article indicates what a random sampling of consumers from throughout Arizona are thinking.

Early last year the Ad Hoc Malpractice Insurance Crisis Committee of ArMA commissioned the author of this article to conduct a study. The overall objective of the study was to examine the opinions, attitudes, and behavior of consumers toward health care and physician services, especially as they may impact on malpractice. This article reports on a portion of the consumer survey responses that were gathered as part of the study. A random sample of 997 adult residents of Arizona participated in the consumer survey. More specifically, 546 repondents were from metropolitan Phoenix, 251 from metropolitan Tucson, and 200 from communities outside the state's two population centers. A sample of 997 is statistically reliable and offers a good base for making inferences about Arizona's adult population. The consumer survey was conducted over the telephone by a professional interviewing firm.

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Table 1
General Relationships With Physicians

Type of Practice of Primary Physician	Percent[1]
Solo practice	44.6
Practice with others	43.7
Health plan/HMO	10.7
Kind of Doctor Seen as Primary Physician	**Percent[1]**
Family/General Practice	71.3
Internist	11.8
OB/Gynecologist	3.4
Pediatrician	3.0
Surgeon	2.1
Osteopath	5.4
Other M.D.	2.0
Number of Years Seeing Primary Physician	**Percent[1]**
Less than 1	11.5
1 to 3	23.3
3+ to 6	22.8
6+ to 12	22.4
Over 12	19.5
Physicians Seen Over Past Year	**Percent[2]**
Family/General Practice	60.2
Internist	19.8
OB/Gynecologist	33.5
Pediatrician	20.1
Surgeon	24.2
Osteopath	10.1
Other M.D.	3.1
Other health care provider	1.9
None	11.5
Family Visits to a Physician Over Past Year	**Percent**
None	11.5
1 to 3	30.6
4 to 7	25.4
8 to 10	8.9
11 to 14	8.7
15 or more	14.6

[1]These data exclude respondents who indicated they did not have a family doctor.
[2]Sums to over 100 percent because of multiple responses to the question.

Sample Profile

The repondents from the consumer survey represent a cross section of the population of Arizona. All ages, family sizes, education levels, geographic areas, income levels, and sexes were a part of the survey. Over 25 percent of the survey participants did not have a family doctor. This high figure is a result of the state's regular influx of newcomers and the tendency for existing residents to move from one place to another. These factors contribute to a rate of patient retention that is lower than the national norm.

Relationships with Physicians

Arizona consumers exhibit varying relationships with physicians. Table 1 illustrates these relationships for the three out of four consumers who have a family or primary doctor.

Most consumers have a primary physician engaged in either solo practice or practice with others. Various health plans account for just over 10 percent of the primary care. Physicians engaged in family/general practice account for nearly three-quarters of the consumers' primary physicians. The results show that a good number of patients are not loyal to their primary physician. For example, although nearly three-quarters of the consumers had lived in Arizona over six years, less than half had been with the same physician over six years. If one looked at only long time residents, the patient loyalty figures are even more disappointing.

Within the various households interviewed, a variety of physicians had been seen in the past twelve months. In 60 percent of the cases at least one family member had seen a family/general practitioner. A third of the households had seen an OB/gynecologist, a quarter had seen a surgeon, and approximately 20 percent had seen a pediatrician and/or internist. Osteopaths had been visited by 10 percent of the families. The number of visits made to a physician varied widely

Opinions of Physicians

Consumers have a favorable image of physicians as shown in Table 2. Nevertheless, the responses show some areas of concern.

The majority of consumers feel that doctors are ethical and responsible people and competent practitioners, but charge too much for the services they provide. Most people do *not* feel that physicians place money interests before the well-being of their patients. In specifically assessing their own physicians, a substantial majority indicate they had a lot of confidence in their doctor and that their doctor does a good job of explaining medical problems. Despite their praise of their own physician, just over half of the consumers felt that doctors in general do a poor job of explaining medical problems to patients.

Attitudes Toward Fees

As shown in Table 2, a majority of people do *not* feel that physicians place money interests before the well-being of their patients. A clear majority, however, indicate that physicians charge more than their services justify. These opinions are significant enough to justify further attention.

Whether a respondent had a family doctor or not seemed to have no real influence on the reaction to statements three and four in the table. The statements were also analyzed according to the number of years a person had been with their family doctor. The shorter the length of time with the doctor, the more likely a person was to agree with both statements. The frequency with which family members had seen doctors had no effect on the responses.

Varying participant educational levels resulted in some interesting differences (see Table 3). Lower to middle educational levels were more inclined to think doctors place personal financial gain above patient well-being in terms of priorities. The differences are most pronounced at the extremes. Forty-four percent of the consumers with less than a high school education agreed with the statement, while only 21 percent of those with post graduate work or a graduate degree concurred. Undoubtedly, the later group includes professional people (e.g., CPA's, attorneys, dentists) who may be more familiar and sympathetic with the situations of another professional group. In analyzing the other statement by educational levels no real differences are seen. All educational groups clearly believe that physicians charge too much for the services they provide.

Income also has an impact on the public's attitudes toward physician fees. The higher the income level the more likely people are to disagree with the statement that physicians place money interests ahead of patient well-being. All income groups, except households making over $45,000 annually, clearly feel that physicians charge too much for the services they provide.

Age differences were insignificant except among the 65 and over group. This group was far and away the most negative toward physicians on fee related matters. Over 41 percent indicated that doctors are more interested in monetary gain than their patients (the next highest age group was less than 34 percent). The elderly group also easily led the way in feeling physicians charge too much (76.2 percent "strongly" or "somewhat" agreed). Analysis of the two statements according to geographic area and sex produced no substantial differences.

Table 2
Consumers Opinions of Physicians

Statement	Attitude				
	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Most doctors are ethical and responsible people.	49.5	39.8	4.4	4.2	2.1
Most doctors are not very competent	4.6	9.8	10.4	38.1	37.1
Doctors charge too much for the services they provide.	40.3	22.6	13.7	14.0	9.5
Most doctors are more interested in making money than the well-being of their patients	11.9	19.3	14.2	29.3	25.4
I have a lot of confidence in my doctor.	69.4	14.3	9.6	3.4	3.3
My doctor does a good job of explaining my medical problems to me.	54.7	25.2	8.2	6.4	5.4
In general doctors do a poor job of explaining medical problems to patients.	27.6	22.9	8.9	25.3	15.4

Table 3
Consumer responses to "Most Doctor are more interested in making Money than the well-being of their patients" analyzed by education levels

Educational Level	Attitude				
	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Less than high school	17.2	27.6	11.0	23.5	20.7
High school or trade school graduate	12.0	17.9	15.0	30.8	24.3
Some college or post high school	11.3	19.7	13.5	30.3	25.2
College graduate	9.9	18.3	13.7	29.0	29.0
Post-graduate work or graduate degree	7.2	14.4	17.5	30.9	29.9

Attitudes Toward Physicians' Communications

From the last statement in Table 2, the reader will recall that 50 percent of the participants felt that physicians in general do a poor job of explaining medical problems to patients. Approximatley 40 percent disagree with the observation. To provide greater insight into this situation, the statement was analyzed in greater detail. Parenthetically, the vast majority of consumers feel their own doctor does a good job of explaining medical problems.

People without a family doctor have a slightly greater tendency to agree with the statement, "In general doctors do a poor job of explaining medical problems to patients." The number of years a

person had been with their family doctor had no influence on reaction to the statement except those with their family doctor"less than one year." This group had the highest agreement with the statement.

In Table 4, responses to the statement are analyzed according to the kinds of doctors a participant's family had seen in the past year. The results clearly demonstrate that all fields of specialization could improve their communciation skills. Agreement with the statement ranged from a low of 46 percent (pediatricians) to a high of 61 percent (orthopedists). Consumers patronizing osteopaths and chiropractors exhibited no significant differences from people visiting medical doctors. The other factors used in the analysis (ie, frequency of doctor's visits, age, education, income, geographic area, sex) revealed no differences. A good share of people within each of the five groups voiced criticism of doctors' communications.

Attitudes Toward Health Interest

As indicated in Table 5, most Arizona consumers display an interest in learning about the topic of health. A substantial majority often read newspaper and magazine articles about health topics and watch TV programs that discuss health. Vast numbers also are interested in receiving printed information from the doctor explaining their medical problems and treatment. The table also shows that the vast majority of the survey participants consider themselves to be in excellent health.

More detailed analysis of these health interests is warranted. Interest in having "brochures available from my doctor explaining my medical problem and treatment" correlates with the frequency of a family's doctor's visits. This is, the more frequent the visits the more interest in medical brochures. All educational levels are interested in receiving literature with the strongest appeal being among those with less schooling. Finally, all three geographical areas favor brochures with the greatest interest (76 percent) coming from the non-metropolitan area. This finding may be a reflection of the few opportunities to see some medical specialists.

The interest in reading newpaper and magazine articles and watching television programs varies with a person's educational level. Table 6 demonstrates that the higher the educational level, the greater the likelihood of frequent reading of health articles in newspapers and magazines. In contrast, Table 7 shows that the lower the educational level, the higher the probability of frequent viewing of TV programs on health topics. In looking at both tables, it is apparent that those with less than a high school education can be reached by either the

Table 4
Consumer Response to "In general doctors do a poor job of explaining medical problems to patients" analyzed by the kinds of doctors seen by family members in the past twelve months

	Attitude				
Kinds of Doctors Seen	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Family/GP	24.0	25.0	9.0	27.6	14.5
Internist	29.1	24.0	9.1	22.3	15.4
OB/Gynecologist	28.6	21.9	8.1	26.9	14.5
Pediatrician	21.9	24.2	7.3	29.2	17.4
Surgeon	29.4	25.2	8.9	19.1	17.3
Osteopath	29.2	25.8	5.6	23.6	15.7
Cardiologist	29.6	25.9	3.7	18.5	22.2
Chiropractor	29.4	23.5	-0-	23.5	23.5
Orthopedist	39.1	21.7	8.7	21.7	8.7
Other	28.0	21.5	8.6	25.8	16.1

Table 5
Consumers Opinions Related to Health Interests

	Attitude				
Statement	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
I often read newspaper and magazine articles about health topics.	32.1	40.5	4.6	12.3	10.5
I often watch TV programs that discuss health.	25.2	34.9	5.0	17.1	17.7
I would like to have brochures available from my doctor explaining my medical problem and treatment	49.6	21.0	7.6	12.7	9.1
It seems that I am sick more than other people.	1.4	3.8	2.0	11.9	80.9

Table 6
Consumer responses to "I often read newspaper and magazine articles about health topics" analyzed by education level

	Attitude				
Educational Level	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Less than high school	20.7	44.8	2.8	19.3	12.4
High School or trade school graduate	29.9	44.3	4.4	10.6	10.9
Some college or post high school	36.5	35.4	4.7	13.1	10.2
College graduate	38.2	35.9	4.6	10.7	10.7
Post-graduate work or graduate work	36.1	41.2	7.2	8.3	7.2

Table 7
Consumer [illegible] to "I often watch TV programs that discuss health" analyzed by educational level

Educational Level	Attitude				
	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Less than high school	25.5	41.4	2.8	14.5	15.9
High school or trade school graduate	27.9	34.6	5.3	17.3	15.0
Some college or post high school	24.1	36.5	4.4	19.0	16.1
College graduate	22.9	30.5	5.3	17.6	23.7
Post-graduate work or graduate work	21.7	26.8	7.2	16.5	27.8

print or electronic media, while all other groups show a higher propensity to print over TV, at least on health topics. Newspaper and magazine readership is also influenced by age. Over 80 percent of consumers 50 and over agreed or strongly agreed that they often read health articles in contrast to less than 63 percent of the 18-24 age group. No age differences were seen in TV program viewing.

Conclusion

This article highlights a part of a comprehensive report on consumer and physician attitudes toward health care in Arizona. As such, it focused on consumer attitudes toward physicians and health care. Although the public has an essentially positive opinion of physicians, a number of areas of concern were brought out. The article also shows that consumers have a high interest in learning about the topic of health.

The third article in this five part series will present additional results from the consumer survey. Next month's topic will be consumer attitudes toward malpractice and the consumers' propensity to sue. The physician survey responses will be discussed in the fourth article in the series. The final article will offer a comparative analysis of the consumer and physician findings. Together, the five articles will provide the reader with a comprehensive view of the public's and physicians' opinions on physicians, health care, and malpractice. Hopefully, the series will contribute to better patient-physicians understanding and, in turn, improved health care.

References

1. The five articles are derived from the report "Consumer and Physician Attitudes Toward Physician Services, Medical Malpractice , and patients." The report was submitted by this author to the Ad Hoc Malpractice Insurnace Crisis Committee of ArMA in August 1979.

Pesticides in Arizona An Update

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In 1978 the subject of pesticide use in Arizona received significant attention. A controversy developed in the Scottsdale area concerning the drift of a defoliant applied to cotton crops nearby. There have been many requests for more information regarding the extent and severity of pesticide problems. Accordingly, this review of available data has been made to acquaint physicians with the status of this problem in Arizona and to identify possible weakness in the reporting system.

Farming as an industry ranks fourth in income production in Arizona. The cash receipts for crops and livestock in 1977 totaled 1.26 billion dollars with 73% represented by cotton, hay, cattle, and dairy products.[1] In 1977, in the principal farming counties of Maricopa, Pinal and Yuma 22,800 agricultural workers were recorded, of whom 16,000 were "hired" workers, and 6,800 were unpaid "family" workers. An unknown number of "undocumented" workers were also present in the state.

A profile, provided through Arizona Pesticide Sales Survey (Table 1), of the chief pesticides used in the state for 1977 included reponses from 29 distributors. Information was requested from 200; however, it was felt that the data included the major distributors. The total documented quantity of pesticides sold in Arizona in 1977 was in excess of 14 million pounds.[2]

Mortality from pesticides in the United States has been reported by Hayes et al[3] using information from death certificates collected by the National Center for Health Statistics. The most recent of these studies revealed a total of 61 accidental deaths in the United States from pesticides in 1973, and 52 in 1974. Of this number 30% in 1973 and 32% in 1974 were children under ten, although they represent less than 17.5% of the population. During this two-year period only nine deaths (about 8%) were attributed to occupational exposure. Many of the deaths, on investigation, appeared to have been due to actual ingestion of the toxic materials. (68% and

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65% respectively for the 2 years, 1973, and 1974.) A substantial number appeared to be the result of suicide (12 in 1973, 10 in 1974). Age group comparisons by Griffith et al.[4] made using statistical estimates, show 16 Arizona occupational exposure deaths between 25 and 64 years of age and an equal number in children under 10 using combined figures for the years 1971-1973.[4]

In 1976 the Environmental Protection Agency (EPA) statistically estimated all hospital admissions for pesticide poisoning in each state for the years 1971, 1972, and 1973.[4] The data reported for Arizona are presented in Table 2 and show an average of 67 estimated poisonings per year, 77% related to occupational exposure. Reported occupational poisonings in the study occurred in pesticide applicators and workers in the manufacturing or formulation of the chemicals, rather than in any farmers or agricultural workers. When pesticide related hospitalizations were examined by age group a substantial number were found to be under 5 years of age, a yearly average of 17.4%. The classes of pesticides invovled in EPA region IX (California, Arizona, Nevada, and Hawaii) are shown in Table 3. The percentage of hospital admissions indicate a preponderance of anti-cholinergic organophosphates.

Data regarding occupational pesticide poisonings not severe enough to require hospitalization are quite limited. The Arizona Poison Control Information Center (APCIC) which receives data from hospital emergency rooms throughout the state, reported 3,180 cases of human poisonings of all kinds in 1978; 111 cases or 3.1% involved pesticides.[5] This report provides no information regarding occupational exposure or age incidence.

These data almost certainly understate the extent of exposure of Arizonans to pesticides. Mild symptoms of coryza, rhinorrhea, headache, dizziness, and gastrointestinal irritation may be tolerated by individuals exposed. Availability of health care facilities, cost of health care, and lack of knowledge regarding the effects of these chemicals may limit the number of people seeking medical attention. Migrant workers may not be acquainted with available medical facilities. Unregistered aliens may fear recrimination upon presenting with symptoms. Physicians' offices are not required to report such cases. Smaller rural hospitals located near exposure sites treat the preponderance of pesticide poisonings, but are relatively under reported in state statistics compared to larger urban institutions. Proof of toxic exposure by laboratory data may be difficult to document. The clinician who suspects a pesticide problem involving a cholinesterase inhibitor may obtain

Table 1
Pesticide Profile for Arizona 1977[a]

Type[b]	Subgroup[c]	Major Compound[e]
Insecticides (66.1%)	Organophosphates (31.9%)	Parathion (18%)
	Carbamates (6%)	Lannate (3.8%)
	Organochlorines (18.5%)	Toxaphene (15.6%)
	Miscellaneous (14.7%)	Sulfur (12.3%)
Defoliants and Desiccants (17.3%)	Various[d]	Sodium Chlorate (13.3%)
Herbicides (9.8%)	Various	Various
Others - (6.8%)	Various	Various
Soil Fumigants		
Fungicides		
Growth Regulators		

[a] *Abridged from Revised Report of Pesticide Sales in Arizona 1973-1977.*[2] *David N. Byrne, State Pesticide Coordinator, showing major pesticide types, subgroups and compounds as percentages of the total weight in number of lbs. sold.*

[b] *Major pesticide types in order of quantities used expressed as percentages of total weight sold.*

[c] *Major subgroups of pesticide types expressed as percentges of total weight of all pesticides sold.*

[d] *Various denotes a list of many compounds with no single type predominating.*

[e] *Major compounds used in Arizona representing the major subgroups of pesticides and expressed as percentages of total weight of all pesticides sold.*

Table 2
Pesticide Associated Hospitalizations in Arizona

Year	Occupational	Non-Occupational	Intentional	Children 0-4 Years
1971	55	6	0	7
1972	49	18	6	14
1973	55	18	0	14

a. From Griffith et al.[4] *Numbers estimated from use of sampling techniques.*

Table 3
Pesticide Types Involved in Hospital Admitted Poisonings 1971-73

Year	Number Admitted	Organo-Phosphates %	Carbamates Amides and Related Compounds %	Chlorinated Hydrocarbons %	Others Including Arsenic %
1971	75	81	19	0	0
1972	102	93	7	0	0
1973	82	83	0	0	17

a. Data from Griffith et al[4] *for EPA Region IX (California, Arizona, Nevada, and Hawaii). Numbers estimated from use of sampling techniques.*

cholinesterase l[illegible]r in serum or red blood [illegible] in carbamate poison[illegible]erase reactivation may o[illegible], so that in vitro changes hav[illegible] normalized blood levels by [illegible] pecimens reach the laboratory.[6] [illegible] drawn after treatment with [illegible]idoxime (2-PAM, Protopam) for organophosphate poisoning may not reflect the still toxic status of the patient.[6] Late onset nerve conduction deficits are not associated with depressed cholinesterase levels.[10, 13]

Considerable variation exists from state to state in reporting pesticide poisonings. Griffith[4] reported 1,561 human pesticide poisonings nationally in 1974 based on the statistics of the Pesticide Episode Review System. More than 70% of these were reported in the State of California, where a mandatory reporting system for pesticide poisonings associated with occupational exposure exists, there are more specific controls related to the handling of pesticides, as well as a significantly higher number of farm workers.

Long term biological effects of agriculturally used pesticides are even more difficult to ascertain than acute effects. Although the organophosphates have been in use from the late 1940's, large studies of statistical significance have not yet appeared.

Investigators have noted an increased tendency to skin disease in those regularly exposed[6, 7] both allergic manifestations and dermatoses. Dermal absorption of these chemicals is well known[8, 9] and may contribute substantially to the toxic systemic symptoms by allowing direct entry to the circulatory system, bypassing gastrointestinal barriers and alterations.[7]

Electromyographic patterns and nerve conduction rates have been noted to be altered in some apparently healthy workers with long exposure records to the organophosphate compounds. No depression in cholinesterase levels was documented in these workers.[10, 12] These abnormalities were often asymptomatic and long term. A single case report from Arizona in 1977[13] described a more acute case of an agricultural worker hospitalized for six weeks with Guillain Barre Syndrome, four days after splashing himself liberally and repeatedly with merphos (Folex), an organophosphate cotton defoliant, known to have high dermal absorption. Cause and effect in this case are conjectural but suggestive.

In summary, statistics regarding pesticide exposure in Arizona are limited. In some cases they are based on estimates. National statistics attribute the largest number of deaths to oral ingestion of the agent, with ingestion by children under ten constituting nearly one third of the cases.

Multiple factors contribute to underreporting of occupationally related cases of pesticide related illnesses. Increased awareness by physicians in Arizona of this problem should help to improve both identification and reporting of cases. Better voluntary reporting might avoid the need for a legally imposed mandatory system. Further research is necessary to assess possible sequelae of chronic exposure.

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State of the Art

Stinging Insect Allergy: Venom Therapy

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Editor:
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Introduction:

In 1979 we entered a new era in the treatment of stinging insect allergy when the FDA finally released insect venoms for the testing and treatment of sensitive individuals. Since these venoms are so potent it is important for physicians to understand their contents and indications for use. Female Hymenoptera (membrane-winged insects) possess modified ovipositors and no longer lay eggs, but contain a stinging apparatus which can inject potent venoms. Honeybees survive primarily on a carbohydrate diet but occasionally sting other insects for defense or to provide food for their young. If a mammal is stung, the barbed stinger frequently remains in the skin of the victim and is avulsed as the bee flies away. The bee then dies from hemmorhage or evisceration. Darwin thought that this fatal result was against the laws of natural selection for bees, but entomologists now believe it is in the common good for the survival of the colony. Vespids (yellow jackets, wasps and hornets) are omnivores which do not lose their stingers and sting one or more times to immobilize their victims to provide food for themselves and their young.

Bees are attracted to flowers, perfumes, or clothing with bright colors and can be trapped in loose fitting clothing. Yellow jackets and wasps are common in the desert where water is available such as irrigated areas and swimming pools. Hornets are not usually found in Arizona *(Dr. F. Werner, University of Arizona, Department of Entomology, personal communication).* When a victim is stung, volatile substances are released which attract other insects within the same genus. Ants are also Hymenoptera, although only the queens possess wings. Female worker ants have similar stinging apparatus to bees and vespids and certain ant venoms are quite potent.

Kissing bugs (Reduviid bugs) feed at night upon sleeping victims usually producing local or generalized urticaria but fatal reactions to their bites can occur. The bugs often live in the foothills in packrat nests and require a blood meal to moult.

Venom Contents

Most venoms contain biogenic amines such as histamine and serotonin, but the wasps and hornets also contain kinins and acetylcholine-like material. These substances probably account for much of the local reaction seen in normal individuals. In addition, biologically active peptides and free amino acids are also present in these venoms, but most of these contain molecular weights below 10,000 and comprise molecules which are not normally immunogenic because of their small molecular size.[1] Non-immunogenic peptides in bee venom include apamin (a neurotoxin), MCD-peptide (with mast-cell degranulating properties), procamine (a histamine-containing peptide with radioprotective properties), and minimine (which reduces adult *Drosophila* to 1/4 usual size, if applied to larvae.)[2]

Most venoms contain hyaluronidase and phospholipase A_2 as well as other enzyme activities. In this respect, the venoms are similar to snake venoms which contain similar enzymes, although intended originally for digestive purposes. Hyaluronidase is a spreading factor which acts upon hyaluronic acid. Phospholipase A_2 readily attacks phospholipid membrane structures such as cell membranes and mitochondria, but is highly allergenic in Hymenoptera venoms, and much more allergenic than the analagous enzyme in snake venoms.[3] Bee venom also contains a large amount of the large polypeptide, mellitin, which is less immunogenic than phospholipase A_2 or hyaluronidase, but is also capable of disrupting cell membranes and potentiates phospholipase A_2.[2] Enzymes are present in ant venoms and even in kissing bug salivary gland extracts which probably account for their anaphylactic potential.[4-6]

Clinical Picture

The normal reaction to an insect sting is a small local reaction lasting several hours to several days and is self-limited without systemic symptomatology. Exaggerated local reactions, which are large, progressive and persist up to a week, may be troublesome and are difficult to define. Systemic reactions mimic other anaphylactic reactions with generalized urticaria, laryngeal edema, dyspnea, wheezing, hypotension, cardiac arrhythmias, confusion, dizziness, convulsions, loss of urinary or

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Table 1
Representative Treatment Schedule Using a Single Venom Preparation

Dose No.	Day No.	Dose No. Per Day at ½ Hr. Interval	Concentration of Venom to be used (ug/ml)	Volume to be injected (ml)	Amount of Venom Injected (ug protein)	Conditions for Proceeding to Next Dose:
1	1	1	0.01	0.1	0.001	1. If a single dose results in more than a moderate
		2	0.1	0.1	0.01	local reaction (>5.0 cm wheal) within one-half
		3	1.0	0.1	0.1	hour, an additional dose should not be given
2	8	1	1.0	0.1	0.1	during that visit. Repeat the same dose at the next
		2	1.0	0.5	0.5	visit(s) until tolerated.
		3	10	0.1	1.0	
3	15	1	10	0.1	1	
		2	10	0.5	5	2. If systemic manifestation of sensitivity occurs
		3	10	1.0	10	during or following a visit or a single dose results
4	22	1	100	0.1	10	in an excessive local reaction (>10 cm wheal)
		2	100	0.2	20	within one-half hour, do not administer an
5	29	1	100	0.2	20	additional dose during the visit and reduce total
		2	100	0.3	30	dosage for the next visit to half of the
6	36	1	100	0.3	30	total resulting in the reaction.
		2	100	0.3	30	
7	43	1	100	0.4	40	
		2	100	0.4	40	
8	50	1	100	0.5	50	
		2	100	0.5	50	
9	57	1	100	1.0	100	3. Delayed (24 - 48 hours.) local reactions
10	64	1	100	1.0	100	<10 cm, do not require adjusting the dose; for such
12	78	1	100	1.0	100	reactions >10 cm, hold dose at previous level.
15	99	1	100	1.0	100	
Monthly	**	1	100	1.0	100	

* For the mixed vespid preparation, the total venom protein concentration and the total amount of venom protein injected will be triple the amounts shown, with no changes in injection volumes.

** If a patient on maintenance therapy is stung and has any systemic manifestation of sensitivity, his maintenance dosage should be increased to 200 ug, for the relevant venom using no greater than 50 ug increments.

bowel continence or uterine contractions.[7] One half to 1% of the population is at risk of such a reaction, and at least 50 deaths yearly have been attributed to these stings, but many probably go unreported. Most deaths have occurred in persons who have not obtained treatment (injectable epinephrine) within the first hour following the sting, but received either inhaled, sublingual or oral drugs, or no treatment. Beekeepers, who are stung frequently, usually suffer no reaction, but some develop inhalant sensitivity to body components with symptoms of rhinitis or asthma.

Diagnosis

The diagnosis of stinging insect allergy depends upon a careful clinical history. If the patient has suffered a generalized reaction, skin testing with the appropriate venoms, usually one month or more following the sting, is indicated. Because of the potency and danger involved in the use of these venoms, it is recommended that these studies be performed by an allergist where adequate resuscitation, personnel and equipment are available. Whole body extracts are not reliable for skin testing or treatment because of inadequate venom concentration and extraneous antigens present. In addition to skin testing, a blood test known as RAST (radioallergosorbent test), utilizing radiolabled antibody to immunoglobulin E to measure IgE to antigens attached to solid discs, is available for confirmatory information.[8]

Troublesome ant stings in Arizona are usually due to harvester ants or domestic fire ants.[4,8] Proper identification of the offending insect is essential for proper diagnosis and treatment.[4,9] Kissing bug bites also can induce serious or fatal reactions due to antigens present in saliva.[5]

Treatment

The first approach to treatment is avoidance of future stings which requires patient education. After a bee sting, the barbed stinger with the venom sac attached should be scraped away with a knife blade or other object but not squeezed between the fingers since additional venom can be introduced inadvertently by improper first aid. A stinging insect kit with epinephrine, antihistamines and a tourniquet which can be applied proximal to the sting, should be prescribed and proper instructions given to the patient so that these first aid measures are available for immediate treatment.[10] For patients with positive histories and anaphylactic potential to future stings who have demonstrated positive skin tests, venom immunotherapy is available.

This is a costly procedure with regard to time and money. Venom is administered weekly in increasing doses for 2-3 months until 100 micrograms of venom protein, the equivalent of 1-2 stings, is administered during each visit as explained in table 1.

Venom therapy is associated with 10-15% incidence of systemic reactions, usually minor, and this form of therapy is still in its youth, but it is no longer considered experimental and is at least 95% effective. Injection therapy (also known as immunotherapy, hyposensitization, desensitization and allergy shots) is thought to work by 1) the production of blocking antibodies of the immunoglobulin G (IgG) class 2) by decreasing the amount of IgE antibodies produced and 3) by decreasing the amount of histamine release which takes place after antigen exposure. T and B lymphocyte interactions are involved but the role of helper and suppressor factors and other mechanisms are still under investigation.

The following warning is included with the commercial venom preparations as a package insert:

Warning

Hymenoptera venom prepartions should be used only by physicians experienced in administering allergens to the maximum tolerated dose and/or after allergy consultation.

Because of the possibility of severe systemic reactions, the patient should be fully informed by the physician of the risks involved and should be used under his constant supervision. The venom preparations should be used only in settings where emergency resuscitative equipment and trained personnel are immediately available to treat such reactions.

In the treatment of hymenoptera sting allergy, venom should be restricted to patients who have previously experienced a potentially life-threatening systemic reaction, due to an immediate hypersensitivity reaction following the sting of the honey bee, yellow jacket, hornet or wasp, but only when the persistence of venom hypersensitivity has been confirmed by venom skin testing.

Patients currently on whole body hymenoptera insect immunotherapy should be completely reevaluated (history and venoms skin testing) before treatment with these venom preparations is instituted.

All patients receiving venom immunotherapy should be instructed in the procedure for emergency self-injection of subcutaneous epinephrine. These patients should be advised to carry an emergency epinephrine kit during the hymenoptera season, even while receiving venom immunotherapy.

Before administering these venom preparations, physicians should be thoroughly familiar with the information concerning adverse reactions, treatment of overdosage and precautions for use during pregnancy.

Physicians are urged to obtain adequate initial and follow-up treatment for patients who are sensitive to insect stings. Otherwise, the next sting could be fatal. Immediate treatment of reactions when they occur, prescription of a stinging insect kit, and referral of the patient, if indicated, is a reasonable approach. Whole body extracts are no longer considered effective, whereas venom therapy is effective when indicated.

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Editorial

Cardiology Patient Simulator

The University of Arizona College of Medicine has recently acquired "Harvey," the cardiology patient simulator (Figure 1). This unusual and exciting device is able to simulate the bedside cardiovascular findings of almost any cardiac disease at the press of a button. Findings simulated include the blood pressure, bilateral jugular venous pulsations, carotid and peripheral arterial pulsations, precordial pulse abnormalities, and the auscultatory events of each disease state. The acoustic events are heard in the four classic auscultatory areas and are appropriately synchronized to the respiratory cycle and to the various pulses. Even the most complex pulse and auscultatory events are simulated for a given disease and the findings vary with respiration when appropriate. More than one example of a particular variety of disease is represented simulating the marked differences in the clinical presentation of a particular disease that depends upon the severity of involvement. There is a group of instructional slides that accompany each disease. These slides present a typical history for each disease and lead the physician through an orderly approach to the physical examination and diagnostic workup using a self-assessment format. In this slide presentation, all of the elements that should be available with real patients including the electrocardiogram, chest radiograph, and invasive and non-invasive laboratory data are presented. Finally, appropriate medical and surgical therapy is reviewed along with a summary of the pathology and the epidemiology of each disease.

The potential advantages of a realistic and reliable cardiology patient simulator for learning at the student, housestaff, and postgraduate levels are numerous. Unlike the real patient, it is always available and is never tired, worried, or abused. Instructive and even rare cardiac abnormalities can be simulated in a matter of seconds. Students learn at their rate and become personally involved in the evaluation as well as acquiring skills and cognitive information.

The cardiology patient simulator will be used to teach at multiple levels and in various environments. For the beginning student, it may be used for such basic techniques as taking the blood pressure and the first hearing of a murmur. For the cardiologist in training, it provides subtle precordial movements or heart sound variation due to respiration. The patient simulator has many applications for the postgraduate training of the primary care physician. Individuals or small groups may learn without an instructor using the self-assessment slide program or larger groups may cluster around Harvey's "bedside" with the professor conducting the usual teaching rounds.

The cardiology patient simulator is not intended to take the place of the real patient. No one would expect a physician to take care of a patient, having trained only on a simulator, any more than one would expect to fly to New York with a pilot who had been trained in a simulator. Yet, simulation techniques, as the airline industry knows, are invaluable, practical, economical, and effective in guiding the pilot through varied and difficult situations. Similarly, the cardiology patient simulator will allow the beginning



student to make many mistakes and errors in judgement prior to approaching the first real patient.

Since the cardiology patient simulator is so new and exciting, it is important to know how effective it is in teaching and what its role will be in medical schools. The University of Arizona is joining with Emory University, the University of Miami, the University of Nebraska, and Duke University in a study funded by the National Heart, Lung, and Blood Institute to determine the role of this device in medical education. The University of Arizona is proud to be a part of this important project.

Physicians in practice will be able to see and utilize the cardiology patient simulator in action this coming March. The developer of the cardiology patient simulator, Dr. Michael S. Gordon from the University of Miami will be joining Dr. Gordon A. Ewy and other University of Arizona faculty members in the Department of Internal Medicine Cardiology Section's annual postgraduate educational program March 27-29, 1980. We look forward to seeing as many Arizona physicians as possible at what promises to be a most exciting and interesting educational experience.

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ArMA Reports

...ES APPEARING IN THIS SECTION HAVE ...ITED TO CONSERVE SPACE. A COMPLETE ...OF THE MINUTES OF ANY MEETING WILL BE ...LED TO ANY MEMBER REQUESTING THEM.

PUBLIC RELATIONS COMMITTEE

The meeting of the Public Relations Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Thursday, November 8, 1979, convened at 6:50 p.m., Ira B. Ehrlich, M.D., Chairman, presiding.

Burroughs Wellcome Company

Mr. David L. Reynolds, Professional Communications Manager for the Medical Division of Burroughs Wellcome Company and Mr. Dale Sharrah, its District Sales Manager in Arizona, presented to the committee for its review a Proposal for Placing Medical Society Spokesmen on Radio & Television. Mr. Reynolds advised the committee that the program was handled via preparation of video tape and recorded presentations with local physicians which were ultimately used on local TV and radio shows for relaying educational information to the consumer. Samplings of taped interviews were viewed by the committee and, following a discussion, it was the consensus of opinion that the proposal was a sound and advantageous one; that any cost which might ultimately be borne would be minimal in that it would be for equipment necessary to make the recordings only; and that Mr. Reynolds, or his designated agent, on behalf of Burroughs Wellcome Company, together with Sandy Petersen, as the Associations' public relations consultant, proceed to contact various TV and radio stations to determine the marketing potential for such interviews.

Florida Medical Association Films

Letter dated 8/17/79 from the Florida Medical Association relative to cost of production of films. *Received.*

Study Prepared by Dr. Stephen W. Brown

The committee reviewed the study prepared by Dr. Stephen W. Brown entitled "Consumer and Physician Attitudes Toward Physician Services, Medical Malpractice, and Patients." as well as received a background report from Dr. Sattenspiel as chairman of the Malpractice Insurance Crisis Committee, relative to 1) the purpose for the study having been conducted, 2) the uses for which the study was intended to be put, and 3) the reason for referral of the study to the Public Relations Committee. Extensive discussion was generated on the subject, following which it was the decision of the committee that no action would be taken by it with regard to initiating any dissemination of the report; that by virtue of the fact that it was to be published in series form in *Arizona Medicine*, it would be public information and, if requested by third parties, copies of the report would be made available; and that any press releases which might be prepared regarding the report would be handled by Dr. Ehrlich, Dr. Stein, and Sandy Petersen.

New Committee Members

Board of Directors' letter 10/12/79 confirming appointments of Mrs. Donald Davis, Scott Hitt and Diana Stockton to the committee *Received.*

Other Business

"Health Matters" Newspaper Column

Dr. Ehrlich briefly discussed with the committee a letter recently received from Sandy Petersen on a comparison study of circulation of the "Health Matters" newspaper column as opposed to the circulation of the "AMA Health and Safety Tips Column and the merits of continuing the "Health Matters" in addition to the AMA column. It was determined to defer the matter to the next meeting of the committe, at which time samplings of both columns, together with the exact dollar cost to the Association for the "Health Matters" column, would be available for review and determination by the committee.

Maricopa County Medical Society

Dr. Stephen Stein, as Chairman of the Maricopa County Medical Society Public Relations Committee, briefly reported on some of the many ongoing and newly-instituted activities at the county level in the area of public relations, which included their involvement in the Health Fair scheduled for April 14-20, 1980, which basically provides the benefit of education and a health screening to the public.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, November 16, 1979, a quorum being present, convened at 6:43 p.m., William E. Crisp, M.D., President and Chairman, presiding.

Arizona Department of Health Services

Crippled Children's Hospital

Dr. Dandoy addressed the committee regarding the very controversial issue of the Crippled Children's Hospital, advising the members that a committee had been selected to review the continuance by the hospital, by determining the services needed by the community as a whole, which the hospital if reorganized might provide. Dr. Dandoy stated that, since its inception in April, the committee had considered many alternatives and it was felt that a final report with recommendations would be forthcoming in December.

A. Diane B. McCarthy letter of 10/2/79. *Received.*

B. Stephen B. Stein, M.D. letter of 9/21/79. Received.

Following a discussion of the aforementioned letters, it was determined that Dr. Crisp would appoint a committee to undertake a study in an effort to develop a position of the Arizona Medical Association relative to the Crippled Children's Hospital.

State Hospital

Dr. Dandoy stated that the State Hospital had recently had several reviews, all of which had been positive, and that JCH accredition is indicated.

Department Budget

The first department budget meeting was held on November 16, 1979, with the Governor's staff and because a portion of that budget is being requested for funds for assistance to the Arizona Perinatal Program, Dr. Dandoy felt that ArMA would want to keep this in mind in its dealings with the legislators in the upcoming months. After the Governor's staff has made its recommendations, the budget will be the subject of appropriation hearings in both the Senate and the House, at which time the Department would seek ArMA's support.

Additional Items of Interest

Dr. Dandoy informed the committee that Michael J. Krentz, M.D. had recently been hired as the State's Emergency Medical Services Director.

A recent outbreak of various diseases in state day care centers was discussed, with Dr. Dandoy noting that the most devastating of these was that of hepatitis in the centers in Maricopa County and

that workshops had been established regarding hepatitis, the symptoms and the preventative techniques.

Claim Review Committee Guidelines

A set of Proposed Guideline for Claim Review Committee of the Arizona Medical Association with the Mutual Insurance Company of Arizona was presented to the committee for its review and approval. The members were advised that MICA had, subject to Executive Committee approval, already approved such guidelines and, following discussion,

It was moved and carried that the Guidelines for Claim Review Committee of the Arizona Medical Association with the Mutual Insurance Company of Arizona attached hereto and by this reference incorporated herein are accepted on behalf of the Arizona Medical Association. (to conserve space the Guidlelines will not be reprinted. A copy may be obtained by calling the ArMA offices 246-8901.)

Pima County Medical Society

Report of 11/13/79 meeting of the Pima County Medical Society relative to bylaws change. *Received.*

Action of 10/2/79 of the Yavapai County Medical Society. *Received.*

Opinion of legal counsel of 11/12/79 relative to adoption of bylaw's changes by county societies. *Received.*

Following receipt and review of the foregoing documents, a lengthy discussion ensued regarding the concern of ArMA over the apparent conflicts arising within county societies relative to doing away with unified membership and that counsel for the Association be requested to furnish a more specific opinion relating to the interpretation of ArMA's bylaws addressing this issue.

IRS/Malpractice Insurance Surplus Contribution

Legal counsel's opinion dated 11/13/79. *Received.*

The committee discussed in depth the opinion furnished by counsel that payments for the MICA notes are Not deductible and due to the number of audits being conducted by the Internal Revenue Service in this regard,

It was moved and carried that, due to the emergency-type situation which exists, the membership be immediately notified that counsel for the Association has determined that payments for notes to the Mutual insurance Company of Arizona are non-deductible for income tax purposes.

Correspondence

Resignation of John A. Ash, M.D. as Secretary of the Arizona Medical Association. *Received.*

Thanks and good wishes were extend to Dr. Ash by the committee and Mr. Robinson informed the members that, as is the practice of the Association, recommendations for someone to fill the vacancy as Secretary had been requested from the Maricopa County Medical Society. At this point, Dr. Gordon, as President of that society, advised the committee that the Board has recommended Earl J. Baker, M.D. and that Dr. Baker has indicated a willingness to serve in such capacity.

Other Business

Border States Health Research Synthesis and Dissemination Project

The committee reviewed the request for support from Andrew W. Nichols, M.D., M.P.H., together with the application and proposal for the Border States Health Research Synthesis and Dissemination Project.

It was moved and carried to refer the application and proposal for the Border States Health Research Synthesis and dissemination Project to the Governmental Services Committee for its review and comment back to the Executive Committee.

Gray Panthers - Assignment Project.

Summary of Meeting on Assignment Project dated September 27, 1979. *Received.*

Arizona Emergency Medical Systems, Inc.

The request of Arizona Emergency Medical Systems, Inc. for endorsement of a form entitled "Consent to Emergency Treatment" being contemplated under the MATCH (Medical Aid to Children) program was reviewed by the committee.

IT was moved and carried that the Arizona Medical Association approve and endorse the form entitled "Consent to Emergency Treatment" being contemplated for use by the MATCH (Medical Aid to Children) program established by the Arizona Emergency Medical Systems, Inc. (AEMS).

Tumor Registry

The committee reviewed the letter dated October 24, 1979 from Deborah Britton Williams regarding the Arizona Tumor Registry and the support of ArMA by co-sponsorship of a meeting to be held on January 16, 1980 to introduce the concept of a central tumor registry. The committee was advised that ArMA had, in fact on April 29, 1972, adopted a resolution to plan and encourage the implementation of the Arizona Tumor Registry and, therefore, co-sponsorship of the January 16, 1980 meeting was appropriate. The names of Darwin W. Neubauer, M.D. and Herbert N. Munhall, M.D. were suggested as possible participants for that meeting.

Response re PGA Activities

The committee received for its review and discussion the following documents concerning recent activities of the Professional Guild of Arizona (PGA) relating to the meetings held by the Industrial Commission of Arizona (ICA) concerning setting fee schedules.

A. Letter dated 11/9/79 from Michael A. Chasin, M.D.

B. Letter dated 11/2/79 from Harvey G. Brown, M.D.

C. Historical review of facts.

D. Possible form of response to the PGA Special Bulletin.

E. Second possible form of response to the PGA Special Bulletin and other PGA union literature.

The committee discussed at great length the involvement of both the Medical Economics Committee and the PGA, both past and present, with the ICA, as well as the recent resignation of the chairman of the Medical Economics Committee. It was the consensus of the membership that the happenings of the past few months and the materials being distributed by the PGA demanded some type of response by the Association to the physicians within the state in an effort to make all facts of the situation available to them; and it was determined that Dr. Crisp would prepare such a document for immediate dissemination.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

Arizona Chapter, American Cancer Society
Arizona Heart Institute
Arizona Medical Association
Arizona State Hospital, Phoenix
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates, Phoenix
Maricopa County General Hospital, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
Phoenix Psychiatric Council
St. Joseph's Hospital & Medical Center, Phoenix
St. Lukes's Hospital & Medical Center, Phoenix
St.Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

1980

JANUARY

8th Annual Surgical Symposium
January 21-25, 1980. Doubltree Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital, & Phoenix Surgical Society. Call: Susie Davis 264-9021. Approved for 31 hours of category 1 CME credit.

Recognition of Problems of the Hand
January 23, 1980. Glendale Samaritan Hospital, Glendale, AZ. Sponsor: Good Samaritan Hospital. Contact: Good Samaritan Hospital Office of CME, 1033 E. McDowell Rd., Phoenix, AZ 85006.

Medical Aspects of Family Planning
January 24, 1980. Williams Air Force Base, Hospital Conf. Rm. Sponsor: USAF Manpower & Personnel Center & Surgeon's Office. Contact: Williams Air Force Base, Chandler, AZ. Approved for 1 hour of category 1 credit.

Continuing Education in Perinatal Medicine
January 25-26, 1980. Yuma, Arizona. Sponsor: ArMA & Arizona Perinatal Program. Contact: Arizona Perinatal Program, 810 W. Bethany Home Road, Phoenix, AZ 85013. Approved for 15 hours of category 1 credit.

Sleep Disorders
January 26, 1980. Good Samaritan Hospital, Phoenix, AZ. Sponsor: Good Samaritan Hospital. Contact: GSH, CME office, 1033 E. McDowell Road, Phoenix.AZ 85006. Approved for 6 hours of category 1 credit.

27th Annual Scientific Assembly of AAFP
January 20-Feb.2, 1980. Doubletree Inn, Scottsdale, AZ. Sponsor: U of A College of Medicine, & AAFP. Call: Lee Mahoney 949-7797. Approved for 19 hours of category 1 credit.

Medical History Society of Arizona
January 31, 1980. Maricopa County Medical Society, Preston T. Brown Room, 2025 N. Central Ave., Phoenix, AZ 85004. Contact: William C. Weese, M.D., 265-0000.

FEBRUARY

2nd Annual Southwest Desert Symposium in Anesthesiology
February 1-3, 1980. Doubletree Inn, Tucson. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724.

Meeting of the Society of Cardiovascular Radiology
February 3-7, 1979, Hyatt Regency Hotel, Phoenix, AZ. Sponsor: Society of Cardiovascular Radiology. Contact: Wm. Casarella, M.D. (212) 694-2286. Approved for 23 hours of category 1 credit.

Osteomyelitis-Causes, Diagnosis and Treatment

February 7, 1980. Williams Air Force Base, Hospital Conf. Romm. Contact: USAF Manpower & Personnel Center, Surgeon's Office. Approved for 1 hour of category 1 credit.

Annual BNI Symposium - "New Perspectivies in Cerebral Localization"
February 7-9, 1980. Hyatt-Regency Hotel, Phoenix, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Barrows Neurological Institute. Contact: Richard A. Thompson, M.D., Chairman, 350 West Thomas Rd., Phoenix, AZ 85013.

Emergency Care Update
February 7-9, 1980. Arizona Health Sciences Center, Tucson. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724.

Coronary Disease, Exercise Testing & Cardiac Rehabilitation
February 8-10, 1980. Mountain Shadows Resort, Scottsdale, AZ. Contact International Medical Education Corp., 64 Inverness Drive East, Englewood, Co 80112. Approved for 13 hours category 1 credit by AMA, and 13 prescribed hours by AAFP

Advanced Cardiac Life Support Program (Provider Course)
February 8-9, 1980. ArMA Offices, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Sponsor: A.C.E.P., AZ Affiliate American Heart Assoc. & ArMA. Contact: Carol Turner, ArMA offices. Approved for 16 hours of category 1 credit.

Medical Controversies
February 8-10, 1979. Registry Resort, Scottsdale, AZ. Sponsor: Health Maintenance Associates. Contact: Clifford Harris, M.D., 957-9200.

5th Annual Seminar - Radiology & Geriatric Medicine
February 8-10, 1980. Doubletree Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Austin R. Sandrock, M.D., Program Chairman. M.C.G.H., Dept. of Radiology, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Myeloproliferative Syndromes
February 11-15, 1980. Del Webb's Townhouse, Phoenix, z. Sponsor: American Society of Clinical Pathologists. Contact: American Soc. of Clinical Path., 2100 W. Harrison St., Chicago, Ill. 60612. Approved for 30 hours of category 1 credit.

Taos Medical Symposium
February 12-15, 1980. Tennis Ranch of Taos, Taos, New Mexico. Sponsor: New Mexico Chapter, AAFP, CME Committee, New Mexico Medical Society, Albuquerque Academy of Family Physicians, Albuquerque & Bernalillo County Medical Association. Contact: Thomas A. Bodnar, Program Director, 2650 Yale Blvd., S.E., No. 103, Albuquerque, New Mexico 87106

Southwestern Seminar on REhabilitation of Patients with Neuromuscular Disorders
February 14-16, 1980. Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724.

Nineth Annual Day of Medicine: Day of Cardiology
February 15, 1980. Arizona Biltomore, Phoenix, AZ. Sponsor: St. Joseph's Hospital & Medical Center, & Flinn Foundation. Contact: Darlene Graham, Dept. of IM, St. Joesph's Hospital, P.O. Box 2071, Phoenix, AZ 85001. Approved for 6 hours of category 1 credit.

Neurosurgical Problems: Update for the Primary Physician
February 16, 1979. The Adams Hotel, Phoenix, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 7 hours of category 1 credit.

2nd Annual Ski & Study Program
February 16-21, 1980. Park City, Utah. Sponsor: Desert Samaritan Hospital CME Committee. Contact: Betty Wood, Desert Samaritan Hospital, Mesa, AZ.

Eighth Annual Taos Lung Disease Symposium
February 22-24, 1980. Sponsor: New Mexico Thoracic Society. Contact: New Mexico Thoracic Society, 216 Truman N. E., Albuquerque, N. 87108. Approved for 13½ hours of category 1 credity by AMA.

Second Annual International Cataract Surgery Symposium
February 18-20, 1980. Sponsor: Arizona Foundation for Ophthalmic Research and Education. Contact: Ronald W. Barnet, M.D., Medical Director, 421 N. 18th St., Ste 105, Phoenix, AZ 85006. (602) 257-1077. Approved for 18 to 20 hours of category 1 credit.

3rd International Conf. on Integrated Cancer Management
February 20-22, 1980. The Pointe Resort, Phoenix, AZ. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 16 hours of category 1 credit.

Evaluation & Management of G-I Bleeding
February 21, 1980. Williams Air Force Base, Hospital Conf. Room. Sponsor: USAF Manpower & Personnel Center & Surgeon's Office. Approved for 1 hour of category 1 credit. **Frontiers in Ophthalmology**

February 21-23, 1980. LaPosada Resort, Scottsdale, AZ. Sponsor: Rockefeller & Abbie Prentic Eye Institute of St. Luke's Hospital, 525 N. 18th St., Phoenix, AZ 85006. Contact: Office of CME St. Luke's Hospital. Approved for 15 hours of category 1 credit.

8th Annual Medicine Conference Advances in Internal Medicine II
February 21-23, 1980. Carefree Inn & Resort, Carefree Arizona 85008. Sponsor: Maricopa County General Hospital. Contact: Myra DaBolt, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 21 hours category 1 credit.

Gastroenterology for Clinicians - New Directions
February 21-23, 1980. Del Webb's TowneHouse, Phoenix, AZ. Sponsor: David C.H. Sun Memorial Institute. Contact: Mrs. David C.H. Sun, David C.H. Sun Memorial Institute, 4129 East Sandy Mt. Rd., Scottsdale, AZ 85253.

Advanced Cardiac Life Support (Instructor Course)
February 22-23, 1980. ArMA Offices 810 W. Bethany Home Rd., Phoenix, AZ. 85013. Sponsor: A.C.E.P., AZ Affiliate American Heart Assoc. & ArMA. Contact: Carol Turner, ArMA offices.Approved for 16 hours of category 1 credit.

The Day of Immunology
February 23, 1980. Paradise Valley Country Club, Homestead Rm. Phoenix. Sponsor: Scottsdale Memorial Hospital, & St. Luke's Hospital Medical Center. Contact: CME office St. Luke's Hospital Medial Center, 525 N. 18th St. Phoenix, AZ 85006. Aproved for 7 hours of category 1 credit.

Anesthesia for the 80's
February 23-24, 1980. Doubletree Inn, Tucson, Az. Sponsor: U of A College of Medicine. Dept. of Anes. Contact: Office of CME and Outreach, AHSC, Tucson, AZ 85724. Approved for 11 hours of category 1 credit.

Pediatric Update 1980
February 25-28, 1980. Sponsor: St. Joesph's Hospital and Medical Center, Dept. of Pediatrics. Contact: Ronald A. Christensen, M.D., Dept. of Pediatric Education. St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Third Annual Mid-Winter Symposium in OB/GYN
February 27- 29, 1980. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Maricopa County Hospital, Dept. of OB/GYN and Phoenix OB/GYN Society. Contact: The Secretary, Phoenix, OB/GYN Society, 333 East Virginia, Ste 222, Phoenix, AZ 85004.

New Mexico Metabolism Symposium
February 28-March 1, 1980. Taos, New Mexico. Contact: Office of Education. Lovelace Medical Center, Albuquerque, New Mexico. (505) 842-7353.

Contemporary Managment of Stroke and Coronary Disese
February 27 - March 1, 1980. Lodges in Taos, New Mexico. Sponosr: Symposia de Santa Fe. Contact: W.J. Levy, M.D., Symposia de Santa Fe, P.O. Box 5175, Santa Fe, New Mexico 85702

Self-Assessment Program V
February 29, March 1, 1980. Arizona Health Sciences Center, Main Auditorium. Sponsor: U of A College of Medicine & American College of Physicians. Contact: Office of CME and Outreach, AHSC, Tucson, AZ 85724.

MARCH

2nd Annual Symposium on Current Concepts in the Managment of Acute and Chronic Pain
March 1-2, 1980. Hyatt Regency, Phoenix, AZ. Sponsor: Maricopa County General Hospital. Contact: George Wallace, M.D., Program Director, MCGH, 2601 E. Roosevelt, Phoenix, AZ 85008.

Durango, Colorado Ski Symposium
March 5 and March 9, 1980. Sponsor: Albuquerque Academy of Family Physicians. Conact: Albuquerque Academy of Family Physicians, c/o New Mexico Medical Society, 2650 Yale Blvd., S.E., Ste 105, Albuquerque, New Mexico 87106.

Child Abuse & the Air Force Child Avocacy Program
March 6, Wiliams Air Force Base, Hospital Conf. Rm., Contact: USAF Manpower & Personnel Center, Surgeons Office. Approved for 1 hour of category 1 credit.

Antibiotic Use in Life Threatening Situations
March 8, The Adams Hotel, Phoenix, AZ. Sponsor: U of A College of Medicine. Contact: Office of CEM & Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 Credit.

Family Therapy
March 14-15, Registry Resort, Scottsdale, AZ. Sponsor: Phoenix Psychiatri Council. Contact: Howard Wulsin, M.D. 267-5747. Approved for 11 hours of category 1 credit.

American Academy of Pediatarics - Infectious Disease & Immunology Review
March 14-16, Arizona Health Sciences Center, Tucson, AZ. Sponosr: U of A College of Medicine, Contact: Office of CME & Outreach, U of A Health Sciences Center, Tucson, AZ 85724.

6th Annual MCGH Urological Seminar
March 15-16, Doubletree Inn, Scottsdale, AZ, Sponsor: Maricopa County General Hospital. Contact: CME office MCGH, 2601 E. Roosevelt, Phoenix, AZ. Approved for 16 hours of category 1 credit.

Bilateral Renal Agenesis
March 20 Williams Air Force Base, Hospital Conf. Rm.,. Contact: USAF Manpower & Personnel Center, Surgeon's Office. Approved of 1 hour of category 1 credit.

Frontiers in Cardiovascular Disease
March 20-22, La Posada Resort, Scottsdale, Az. Sponsor: St. Luke's Hospital and Medical Center. Contact: Office of CME, St. Luke's Hospital & Medical Center, 525 N. 18th St., Phoenix, AZ 85006. Aproved for 21 hours of category 1 credit.

Adavanced Cardiac Life Support Program (Provider Course)
March 21-22, Arizona Medical Association offices, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Sponsor: ACEP, Arizona Affiliate American Heart Assn & ArMA. Contact: Carol Turner, ArMA, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Gynecologic Endocrinoloyg
March 28-30, Hyatt Regency Hotel, Tucson, AZ. Sponsor: U of A Tucson, AZ. Contact: Office of CME & Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 16 hours of category 1 credit.
Clinical Recognition and Management of Heart Disease
March 27-29, 1980. U of A Health Sciences Center, Main Auditorium. Sponsor: U. of A. College of Medicine & American College of Physicians. Contact: Office of CME and Outreach, AHSC, Tucson, AZ 85724.

Sixteenth Annual Arizona Chest Symposium
March 28-30, 1980. Doubletree Inn, Tucson, Arizona. Sponsor: University of Arizona College of Medicine, and Tucson Medical Center. Contact: Linda Alpert, R.N., Symposium Coordinator, Tucson Medical Center, P.O. Box 6067, Tucson, AZ 85733. Approved for category 1 credit.

Understanding Arth
March 30, Ariz· ,ore, Phoenix, AZ. Sponsor: ciety of Clinical Rheumato St. Luke's Hospital & Medic Contact: CME office St. Lu al & Medical Center, 525 N. 18th enix, AZ 85006. Approved for ory 1 credit.

APRIL

Emergency Room Radiology-Revised

April 11-13, 1980. Arizona Biltmore, Phoenix, Arizona. Sponsor: Maricopa County General Hospital. Contact: Austin R. Sandrock, M.D., Program Chairman, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008

1980 Third Annual Arizona Emergency Medicine Symposium
April 23-25, 1980, Safari Resort, Scottsdale, Arizona. Sponsors: Arizona Emergency Medical Systems, Inc.; Arizona Chapt Am. College of Emergency Physicians, Arizona Chap. of Emergency Dept. Nurses, Assoc., Arizona Paramedic Cont. Educ. Program. Contact: Jennie Johnston, Symposium Coordinator. 301 W. Osborn Rd., Ste 112, Phoenix, AZ. 85013.

Arizona Medical Association 89th Annual Meeting
April 23-27. The Pointe Resort, Phoenix, AZ. Sponsor: The Arizona Medical Association, Inc. Contact: Bruce E. Robinson, Executive Dir., ArMA, 810 W. Bethany Home Road, Phoenix, AZ 85013. Approved for category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Edward B. Diethrich, M.D., Medical Dir.

Clinical Conference Cardiovascular Medicine
Third Tues., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.
Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists
Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.

Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucosn, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.

Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.
Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm
Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.
Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.
Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.
Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North

Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.
Pediatric Grand Rounds
3rd. Tuesday, 7:300-8:30 A.M., West Rm.
Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.
Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.
Dr. Finger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.
Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.
OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.
PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.
Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.
GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.
Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora
Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.
Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology
Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.
Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.
Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.
Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.
Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.
PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.
Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman
Nephrology Conference
1st Monday, 12:30 P.M., Contact: Alan Cohn, M.D.
Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.
Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.
Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.
Gynecology Conference
5th Tuesday, 12:30 P.M., Contact: J. Wurzel, M.D.
Neurology Conference
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.
Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.
Clinical Pharmacology
4th Wed., 12:30 P.M., Contact L. Gardner, Pharm. D.
Clinical Pathology Conference
2nd Wed., 12:30 P.M., Contact: J. Fleishman, M.D.
Medical Conference - Mortality/Morbidity
3rd Wed., 12:30 P.M., Contact: J. Goldberger, M.D.
Rheumatology Conference
1st Wed, 12:30 P.M., Contact: J. Goldberger, M.D.
Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.
Clinical Correlation
3rd Thursday, 12:30 P.M., Contact: J. Goldberger, M.D.
Endocrine Conference
2nd Thurdsday, 12:30 P.M., Contact E. Munjack, M.D.
OB/GYN Dept. Meeting
2nd Thurday, 2 P.M., Contact J. Wurzel, M.D.
GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.
OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel, M.D.
Chest Conference
2nd & 4th Fridays, 12:30 P.M., Contact: D. Engelsberg, M.D.
Dermatology Conference
3rd Friday, 12:30 P.M., Contact: P. Lynch, M.D.
Hematology Conference
1st Friday, 12:30 P.M., Contact: S. Ketchel, M.D.
Medical Conference
5th Friday, 12:30 P.M., Contact: J. Goldberger, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, Z 85008

Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Steven Schaffner, M.D.

Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.
Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.
OB/GYN Dept. Grand Rounds
Weekly 12 Noon, Santa Cruz Room
Obstetrical Problem Conference
Weekly Tuesday, 7:15 A.M., Yavapai Rm.
Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.
Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.
Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42
Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.
Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.
OB/Pernatology Seminar
Weekly, 7:15 A.M., Yavapai Rm.
OB/Neonatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.
Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.
Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.
Cardiology Conference
Weekly Thurs, 2 P.M., Santa Cruz Rm.
OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.
GYN Endocrine Seminar
1st Friday, 12:30 P.M., Sanata Cruz Rm.
YN Grand Rounds
Weekly Friday, 1:30 P.M., Sanat Cruz Rm.
OB/GYN Surgical Pathology Conf.
Weekly Friday, 7 A.M., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.

Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon
OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.
Clinical Staff Teaching Conference, Rm. A.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.
Tumor Board Conference
Weekly Firday, 12 P.M., Kiva Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for category 1 credit.

Family Practice Conference
1st Monday, 12:30 P.M., Doctors' Lounge
Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge

Neurology & Neurosurgery Conference
3rd Monday, 12 [illegible] M., Doctors' Lounge
Internal M[illegible] Clinical Pathological Confere[illegible]
4th M[illegible] 12:30 P.M., Doctors' Lounge
[illegible]y Medicine Conference
[illegible]esday, 12:30 P.M., Doctors' Lounge
[illegible]diology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge
Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge
Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
Cardiolpulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
OB/GYN Dept. Meeting & Conf.
2nd Wed., 12:30 P.M., Doctors' Lounge
Trauma Conference
3rd Thurs, 12:30 P.M., Doctors' Lounge
Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge
Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge
GI Medical—Surgical Rdiological Conf.
2nd Friday, 12:30 P.M., Doctors' Lounge
Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mon., 12:30-1:30 P.M., 1st Flr. Conf. Rm.
Medical Grand Rounds
Weekly Wed., 8 A.M., 1st Flr. Conf. Rm.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 AM, Contact: J. K. Charlton, M.D.
Monthly Specialty Conf.-Dept. Of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med.Staff Office.
Grand Rounds: Medica Surgical, Family Practice, Pathology, Radiology
Weekly Thursday.
Cardiology Conference
Weekly Friday, 8-9 A.M. Century Rm., Contact: Anthony Forte, M.D.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday
Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly, Mondays , execept last, 12 Noon, Contact: J. Fernadez, M.D.
Dermatology Conference
4th Monday, 5:15 P.M., Contact R. Friedman, M.D.
Perinatal Conference.
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.
Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.
Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact L. Mann, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.
Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.
Family Practice Meeding
2nd Wed., 12:30 P.M., Jan, April July & Oct., Contact: O. Koenig, M.D.
Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buchsbaum, M.D.
Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.
Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.
Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.
Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.
Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.
OB/GYN Pathology Conference
Weekly, Thursday, except 2nd, 2 P.M., Contact: J. Wurzel, M.D.
Surgical Literature Course
2nd Thursday, 7:00 P.M., Contct: P. Whitney, M.D.
Tumor Conference
Weekly Thursday, 12 Noon.
G-I Conference
Weekly Friday, 12 P.M., Contact: C. Krone, M.D.
Inter-Hospital Nuclear Medicine Conference
Weekly Friday, 7:15 A.M., Contact: S.V. Hilts, M.D.
OB/GYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.
OB/GYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

VETERANS ADMINISTRATION MEDICAL CENTER

7th St. and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Alfred Heilbrumn, M.D. Approved for Category 1 credit.

GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.
Medical/Surgical G-I Conf.
1st. & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413, Dr. Mertz, ext 493.
Surgical X-Ray Conf. and Bedside Teaching Rounds
Weekly Monday, 4 P.M., Rm. 3134, Contact: Dr. Mertz, Ext. 493.
1st, 2nd, & 3rd Wednesday 10 A.M. — C118, Dr. Roberts, Ext. 426.
Surgery/Pathology Conf. & Tissue Review
1st & 3rd. Tuesday, 4 P.M., Rm. 2128, Contact: Dr. Likos & Mertz
Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., T-5, Contact Drs. Sanowski & Schaffner.
Dermatology Conference
1st,2nd, 3rd Wed., Rm. C-118, Contact Dr. Roberts, Ext. 674.
Cancer Symposium
Weekly, Wed.,1 P.M., T-5, Contact Dr. Byrne, Ext. 426.
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wed., 4 P.M., Rm. 3134, Contact Dr. Mertz, Ext 493.
Medical-Surgical Chest Conference
1st & 3rd Thursday, Contact Dr. Rohwedder or Dr. Gill
Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5
Gastrointestinal Rounds
Weekly Thursday, 1 P.M., Rm D 446
Surgery-Pathology Conference
Weekly Thursday, 2 P.M., Room 2128
Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller
G-I Resident Conference
Weekly 1 P.M., Room D 446
Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.

TUCSON VETERANS ADMINISTRATION MEDICAL CENTER

3601 South Sixty Ave., Tucson, AZ 85723 Contacts listed below. Approved for category 1 credit.

Medical Surgical Chest Conference
Weekly Tuesday, 2:00 P.M., Contact: Dr Young
Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., V.A. Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. Putnam
Endocrinology Seminar
1st.,3rd, & 5th Thurdsays, 12:00-1:00 P.M. Rm. N318, Contact: Dept. of Internal Medicine.

Vascular Radiology, Interesting Case Conf.
Weekly Thursday, 12:00 Noon
Neurology Grand Rounds
Weekly, Friday, 12:00 P.M., Contct: Dr. Sibley.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403
Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact Drs. Otto & Zehngut.
Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.
Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez
Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.
Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn
Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.
Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch
Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson
GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus
GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter
Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Contact: M. Boxer, M.D., Room 6505, Dept. of Internal Medicine.
Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn
Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern
Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.
Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson
Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.
Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.
Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford
Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room
Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross
Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross
Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann
Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley
Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs
Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson
Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones
Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.
Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.
Psychiatric Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. R. Cutts
Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital
Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.
Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson
Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655
Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich
Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.
Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C. **Uroradiology (Genitourinary Radiology)**
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1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.
Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.
Resident's Conference
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Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.
Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.
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Ward Grand Rounds - Trauma
Weekly Tuesday, 8:00 A.M., Contact: Dr. M. Silverstein.
Toxicology Conference
Weekly Tuesday, 8:00 A.M., Contact: Dr. Keith Likes
Section.
Tucson Ultrasonography Group
Weekly Wed., 4:30 P.M., AHSC, Contact: Dr. I. Freundlich.
General Urology Conference
Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

Errata

Arizona Medicine Vol. 36, No. 11 page 834, State of the Art section, article entitled *Atypical Mycobacteria* by Robert E. [illegible], M.D., et al. The figure was not printed it appears here.

Figure 1
Modified Runyon Classification

Runyon Group	Definition	Major Pathogens	Minor Pathogens
I	Slowly growing photochromogens; pigmentation occurs only under the influence of light; colonies become definitely yellow within a day after exposure to light	M. kansasii	M. Marinum
II	Slowly growing scotochromogen; definitely pigmented yellow-orange, even if grown in the dark; if grown exposed to light, will appear reddish.		M. scrofulaceum M. xenopi
III	Slowly growing nonphotochromogens; usually nonpigmented. Light has no effect on existing pigmentation	M. avium* M. intracellulare	
IV	Rapidly growing mycobacteria; growth occurs within 48 hours at 25° to 40°C from small inocula.		M. fortuitum M chelonei

**Runyon originally felt that M. avium and M. intracellulare should be kept separate. But because they resemble each other so strongly that the distinction cannot be made by usual laboratory examination, it has become common practice to term this group the M. avium-intracellulare complex.*

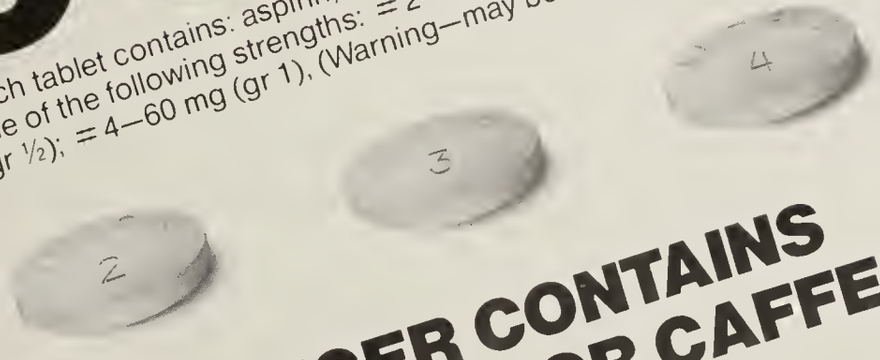
Arizona Medicine Vol. 36, No. 11 page 832, Endocrinology and Metabolism Section, article entitled *Pituitary Disorders: The Role of Prolactin* By Stephen E. Dippe, M.D. et al, it should be indicated that the references are available upon request.

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INDEX TO ADVERTISERS

Arizona Laminating 8

Arizona Medical Services 16

Burroughs Wellcome
Zyloprin 14
Emprin With Codeine

Camelback Hospital 5

Classified Ads 54, 55

Computed Neuorological Scanning Center 4

Computed Tomography 8

Doctors Central Directory 54

Doctors Hospital 7

Eli Lilly & Co.
V-Cillin K 15

HBA Life Insurance 10

House of Mailings 54

Kiva Professional Plaza 54

Medical Bookstore 8

Mica Insurance Co. 6

Mullen Medical Service 54

Roche Labs
Valium Second Cover
Bactrim Third Cover, Fourth Cover

Roswell Bookbinding 4

Smith Kline & French
Tagament 11

Danny T. Sievert
Insurance 54

Upjohn Company
Motrin 12, 13, 14

Valley National Bank 9

Western Physicians
Purchasing Assoc. 3

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SEMINARS IN CONTINUING EDUCATION

CHEST MEDICINE

Foreign Body Aspiration in Childhood 77
Marie-Martine Logvinoff, M.D., et al

DERMATOLOGY

Angioedema and Urticaria Associated with Yellow dye in Medications 79
George M. Makol, M.D., et al

ENDOCRINOLOGY & METABOLISM

Hypocalcemia 81
Stephen E. Dippe, M.D.

GASTROENTEROLOGY & LIVER DISEASE

Ascites 83
Leon A. Rigberg, M.D.

ONCOLOGY

Vitamin A and Cancer 84
Frank L. Meyskens, Jr., M.D.

New Approaches to Bladder Cancer: Individualized Patient Chemotherapy 89
Thomas H. Stanisic, M.D.

SURGERY

Ear Reattachment by the Pocket Principle 91
James M. Clayton, M.D., et al

SPECIAL ARTICLES

Consumer Attitudes Toward Medical Malpractice 93
Stephen W. Brown

Pharmacology in Arizona 96
Thomas F. Burks, Ph.D.

Delegate's Report 98
Arizona Delegation

STATE OF THE ART

Advances in Peritoneal Dialysis Technology: Continuous Ambulatory Peritoneal Dialysis 99
Irvin M. Cohen, M.D.

EDITORIALS

CME Services: Update 102
Anthony F. Vuturo, M.D., et al

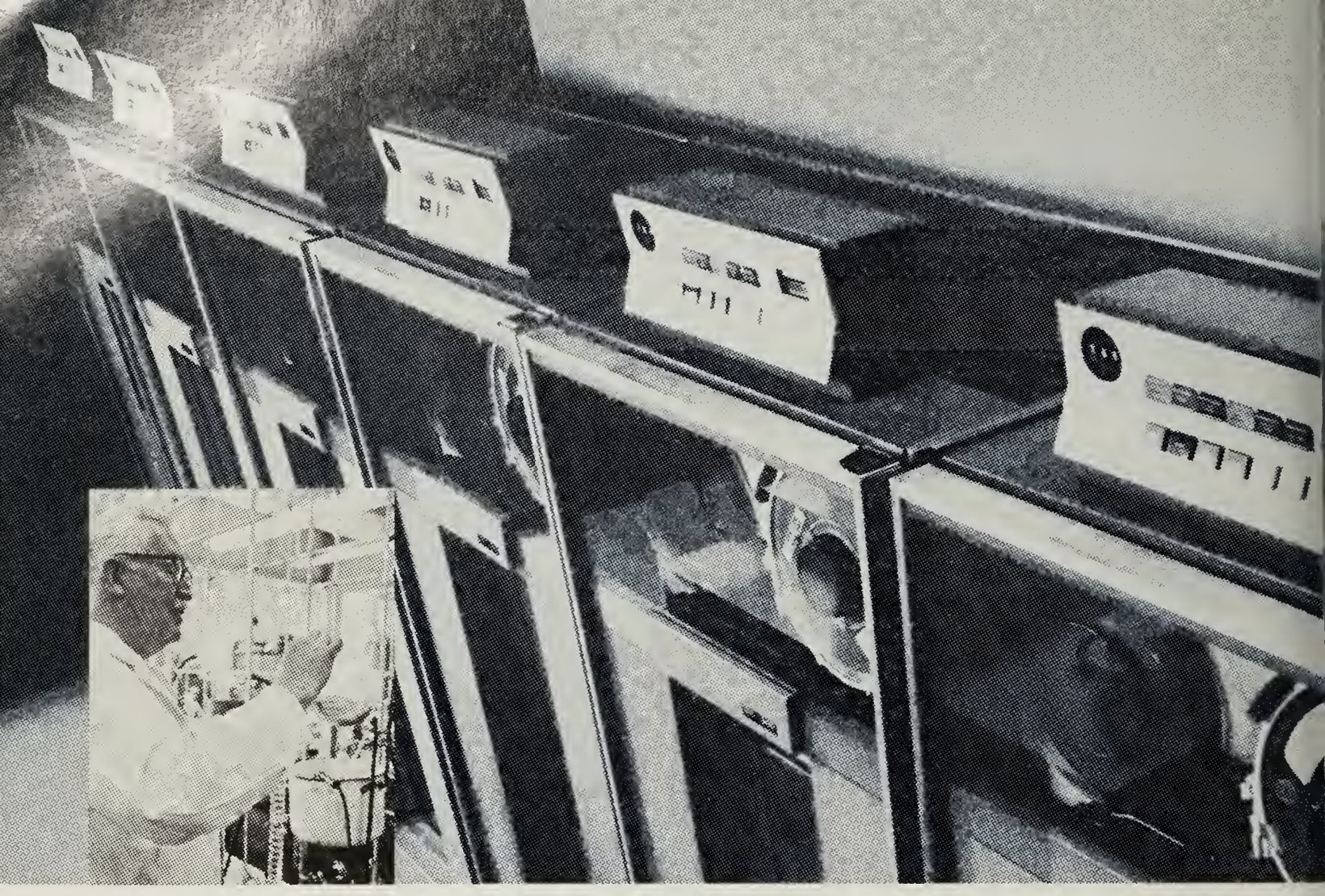
Auxiliary Highlights
Pima County—Women Aware
Mrs. John T. Clymer

ARMA REPORTS 104

FUTURE MEETINGS 111

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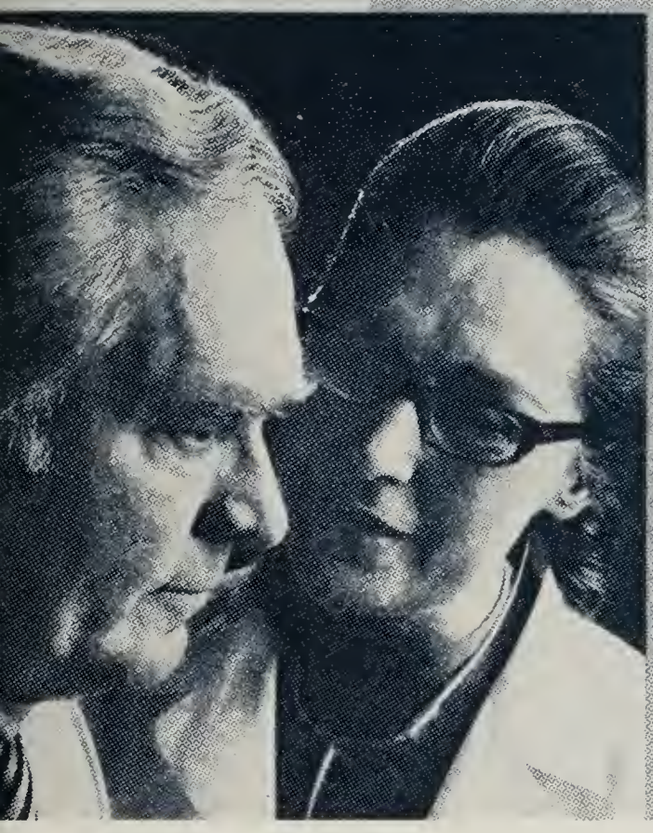
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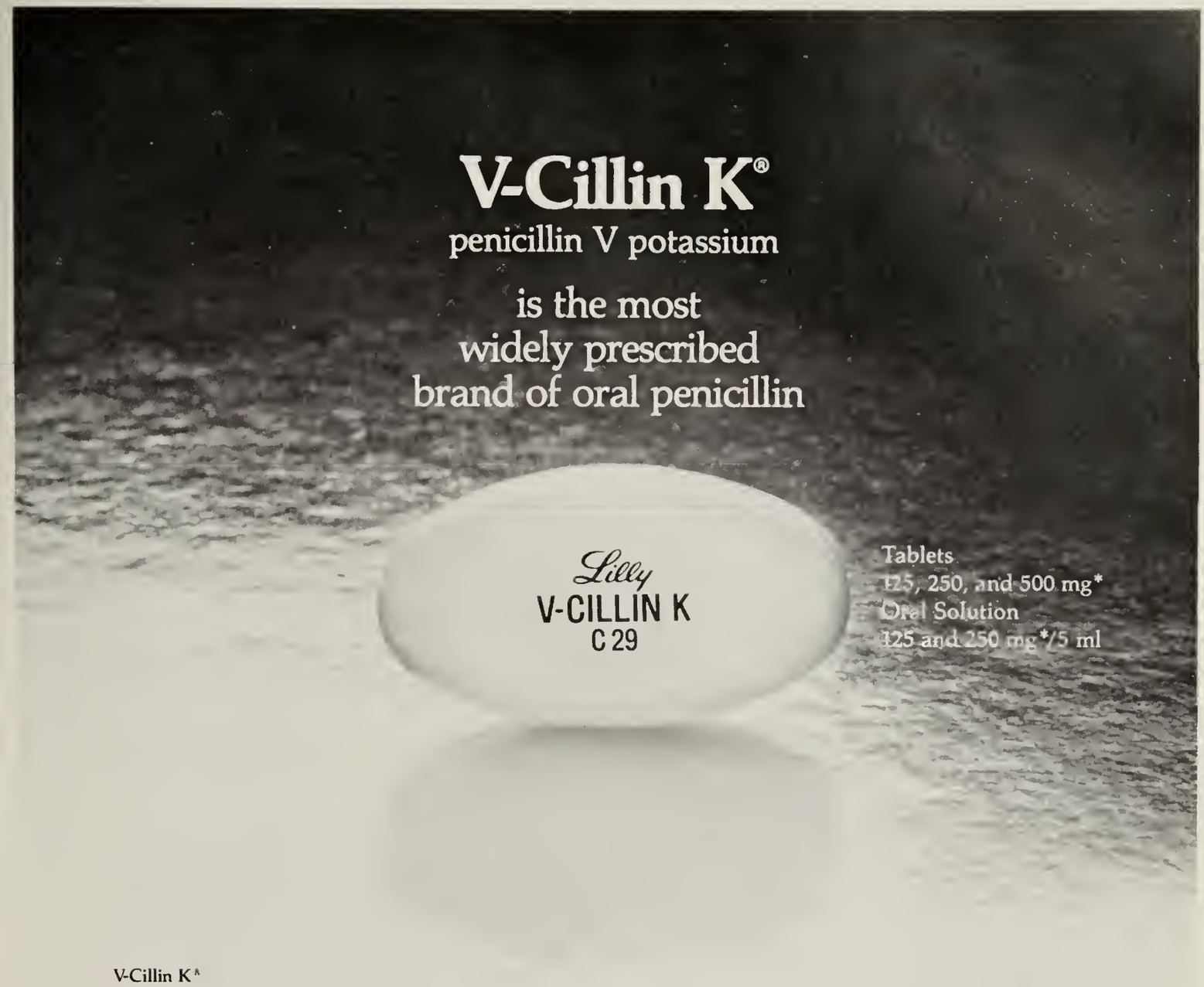
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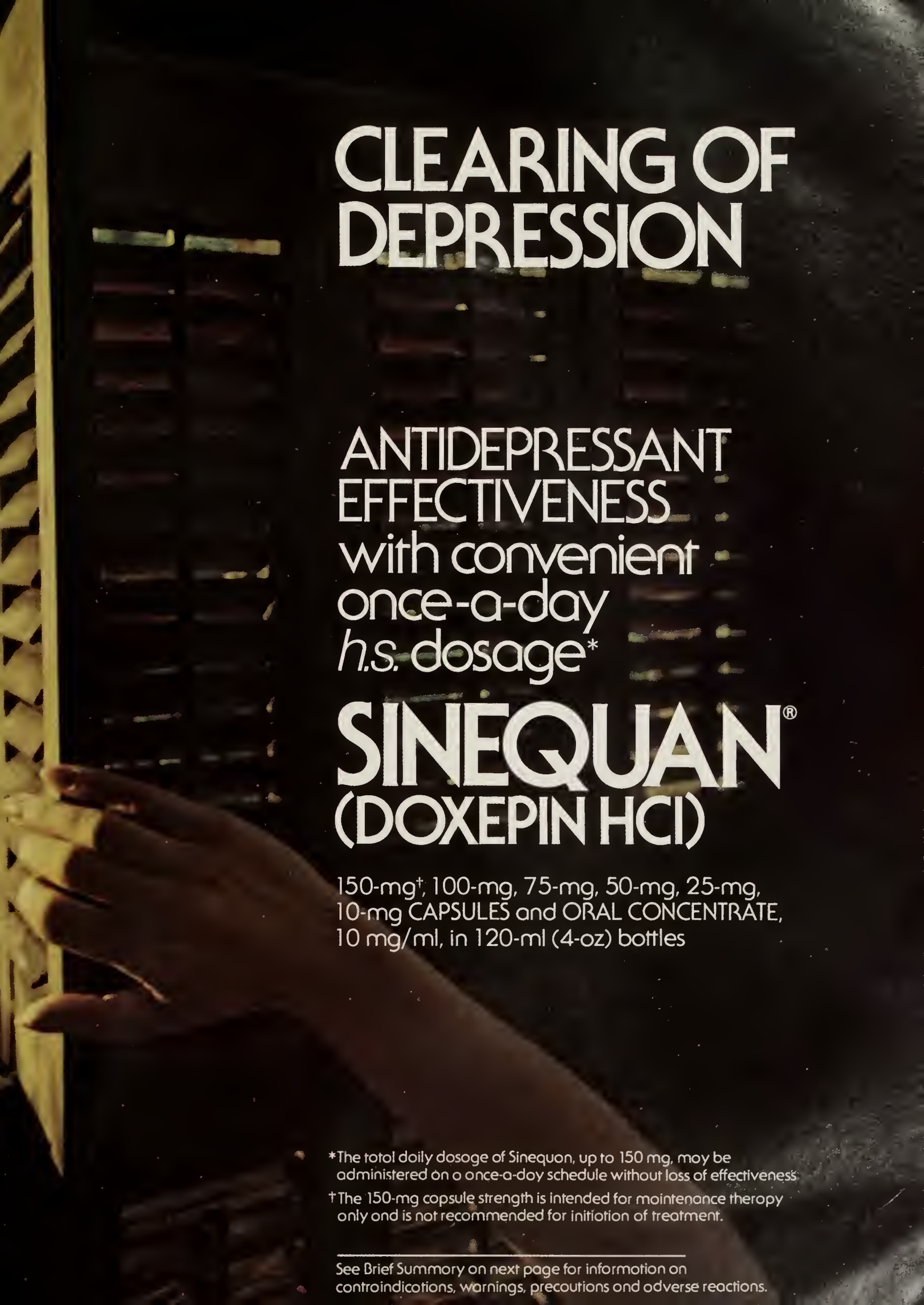
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Warnings. The once-a-day dosage regimen of SINEQUAN (doxepin HCl) in patients with intercurrent illness or patients taking other medications should be carefully adjusted. This is especially important in patients receiving other medications with anticholinergic effects.

Usage in Geriatrics: The use of SINEQUAN on a once-a-day dosage regimen in geriatric patients should be adjusted carefully based on the patient's condition.

Usage in Pregnancy: Reproduction studies performed in animals have shown no evidence of harm to the animal fetus. Since there is no experience in pregnant women receiving this drug, safety in pregnancy has not been established. There are no data with respect to the secretion of the drug in human milk and its effect on the nursing infant.

Usage in Children: Usage in children under 12 years of age is not recommended because safe conditions for its use have not been established.

MAO Inhibitors: Serious side effects and even death have been reported following the concomitant use of certain drugs with MAO inhibitors. Therefore, MAO inhibitors should be discontinued at least two weeks prior to the cautious initiation of therapy with this drug. The exact length of time may vary and is dependent upon the particular MAO inhibitor being used, the length of time it has been administered and the dosage involved.

Usage with Alcohol: It should be borne in mind that alcohol ingestion may increase the danger inherent in any intentional or unintentional SINEQUAN overdosage. This is especially important in patients who may use alcohol excessively.

Precautions. Since drowsiness may occur with the use of this drug, patients should be warned of that possibility and cautioned against driving a car or operating dangerous machinery while taking this drug.

Patients should also be cautioned that their response to alcohol may be potentiated.

Since suicide is an inherent risk in any depressed patient, and may remain so until significant improvement has occurred, patients should be closely supervised during the early course of therapy. Prescriptions should be written for the smallest feasible amount.

Should increased symptoms of psychosis or shift to manic symptomatology occur, it may be necessary to reduce dosage or add a major tranquilizer to the dosage regimen.

Adverse Reactions. NOTE: Some of the adverse reactions noted below have not been specifically reported with SINEQUAN use. However, due to the close pharmacological similarities among the tricyclics, the reactions should be considered when prescribing SINEQUAN.

Anticholinergic Effects: Dry mouth, blurred vision, constipation, and urinary retention have been reported. If they do not subside with continued therapy, or become severe, it may be necessary to reduce the dosage.

Central Nervous System Effects: Drowsiness is the most commonly noticed side effect. This tends to disappear as therapy is continued. Other infrequently reported CNS side effects are confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, and extrapyramidal symptoms and seizures.

Cardiovascular: Cardiovascular effects including hypotension and tachycardia have been reported occasionally.

Allergic: Skin rash, edema, photosensitization, and pruritus have occasionally occurred.

Hematologic: Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura.

Gastrointestinal: Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, and aphthous stomatitis have been reported. (See anticholinergic effects.)

Endocrine: Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels have been reported with tricyclic administration.

Other: Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, and headache have been occasionally observed as adverse effects.

Dosage and Administration. For most patients with illness of mild to moderate severity, a starting daily dose of 75-mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75 mg/day to 150 mg/day.

In more severely ill patients higher doses may be required with subsequent gradual increase to 300 mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300 mg/day.

In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25-50 mg/day.

The total daily dosage of SINEQUAN (doxepin HCl) may be given on a divided or once-a-day dosage schedule. If the once-a-day schedule is employed the maximum recommended dose is 150 mg/day. This dose may be given at bedtime. **The 150 mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Antianxiety effect is apparent before the antidepressant effect. Optimal antidepressant effect may not be evident for two to three weeks.

Overdosage.

A. Signs and Symptoms

1. Mild: Drowsiness, stupor, blurred vision, excessive dryness of mouth.
2. Severe: Respiratory depression, hypotension, coma, convulsions, cardiac arrhythmias and tachycardias.

Also: urinary retention (bladder atony), decreased gastrointestinal motility (paralytic ileus), hyperthermia (or hypothermia), hypertension, dilated pupils, hyperactive reflexes.

B. Management and Treatment

1. Mild: Observation and supportive therapy is all that is usually necessary.
2. Severe: Medical management of severe SINEQUAN overdosage consists of aggressive supportive therapy. If the patient is conscious, gastric lavage, with appropriate precautions to prevent pulmonary aspiration, should be performed even though SINEQUAN is rapidly absorbed. The use of activated charcoal has been recommended, as has been continuous gastric lavage with saline for 24 hours or more. An adequate airway should be established in comatose patients and assisted ventilation used if necessary. EKG monitoring may be required for several days, since relapse after apparent recovery has been reported. Arrhythmias should be treated with the appropriate antiarrhythmic agent. It has been reported that many of the cardiovascular and CNS symptoms of tricyclic antidepressant poisoning in adults may be reversed by the slow intravenous administration of 1 mg to 3 mg of physostigmine salicylate. Because physostigmine is rapidly metabolized, the dosage should be repeated as required. Convulsions may respond to standard anticonvulsant therapy, however, barbiturates may potentiate any respiratory depression. Dialysis and forced diuresis generally are not of value in the management of overdosage due to high tissue and protein binding of SINEQUAN.

Supply. SINEQUAN is available as capsules containing doxepin HCl equivalent to: 10 mg, 75 mg, and 100 mg doxepin, bottles of 100, 1000, and unit-dose packages of 100 (10 x 10's). 25 mg and 50 mg doxepin: bottles of 100, 1000, 5000, and unit-dose packages of 100 (10 x 10's). 150 mg doxepin: bottles of 50, 500, and unit-dose packages of 100 (10 x 10's). SINEQUAN Oral Concentrate (10 mg/ml) is available in 120 ml bottles with an accompanying dropper calibrated at 5 mg, 10 mg, 15 mg, 20 mg, and 25 mg. Each ml contains doxepin HCl equivalent to 10 mg doxepin. Just prior to administration, SINEQUAN Oral Concentrate should be diluted with approximately 120 ml of water, whole or skimmed milk, or orange, grapefruit, tomato, prune or pineapple juice. SINEQUAN Oral Concentrate is not physically compatible with a number of carbonated beverages. For those patients requiring antidepressant therapy who are on methadone maintenance, SINEQUAN Oral Concentrate and methadone syrup can be mixed together with Gatorade®, lemonade, orange juice, sugar water, Tang®, or water, but not with grape juice. Preparation and storage of bulk dilutions is not recommended.

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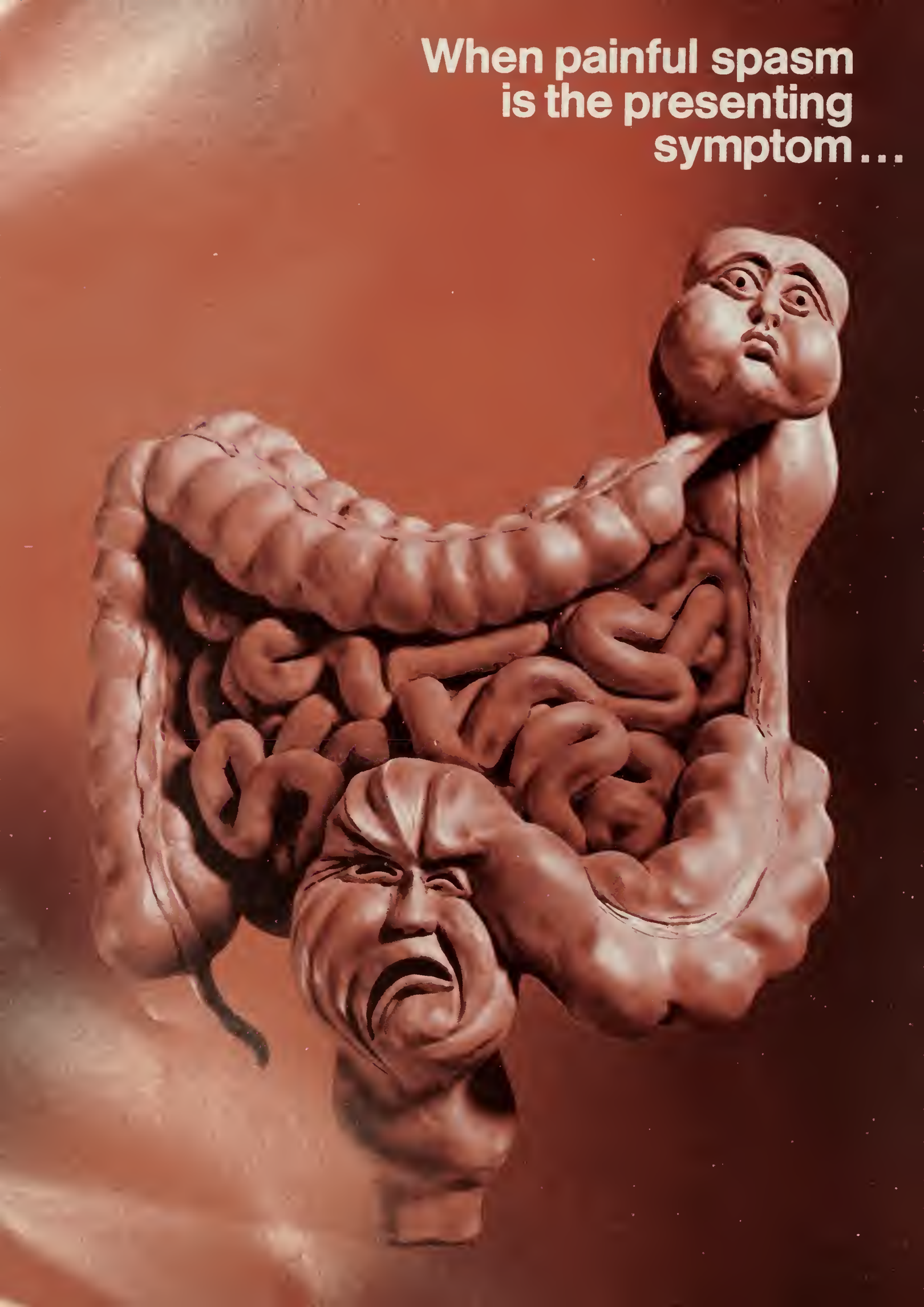
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...in the functional bowel/irritable bowel syndrome*

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. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:
King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

8-4420 (Y736A) MNR-804

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Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences–National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage, severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis, cycloplegia, increased ocular tension; loss of taste; headache, nervousness; drowsiness; weakness; dizziness, insomnia; nausea; vomiting; impotence, suppression of lactation; constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage. Bentyl 10 mg. capsule and syrup: *Adults*: 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children*: 1 capsule or teaspoonful syrup three or four times daily. *Infants*: ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg.: *Adults*: 1 tablet three or four times daily. Bentyl Injection: *Adults*: 2 ml. (20 mg.) every four to six hours intramuscularly only. NOT FOR INTRAVENOUS USE. MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.

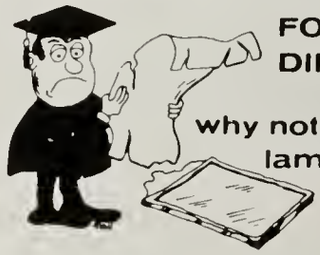
Product Information as of October, 1978.

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VITA-STAT PROFILE: HYPERTENSION

by Ralph E. Snyder, M.D., F.A.C.P. / Medical Director

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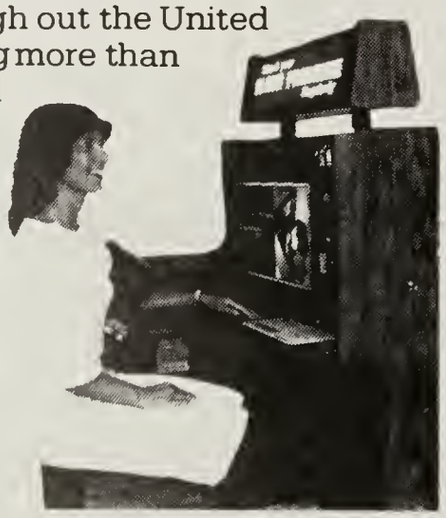
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May 1979 American Journal of Public Health

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Joseph H Chadwick, Ph.D., Director, Health Systems Programs
SRI International

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Dr R. Patterson Russell, Director of the Hypertension Clinic at Johns Hopkins Hospital and Chairman of the High Blood Pressure Commission of Maryland
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***Copies of these and other reports, or medical information about the Vita-Stat Computer is available by writing to me:
Ralph E. Snyder, M.D., Medical Director
2801 75th Street North, St. Petersburg, Florida 33710.

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Chest Medicine

Foreign Body Aspiration In Childhood

Marie-Martine Logvinoff, M.D.
Lynn M. Taussig, M.D.

Editors:
Faysal M. Hasan, M.D.
Richard I. Lemen, M.D.
Bernard E. Levine, M.D.

Foreign body aspiration is the most common cause of accidental death in healthy children. It is also a frequent cause of acute and chronic pulmonary disease in childhood.[2]

Inhaled foreign bodies occur primarily in young children,[4, 5, 9, 11] especially males,[5] with a peak incidence at two years of age. The type of foreign body varies with age. In infants below one year of age, safety pins were most frequently aspirated; however, with the development of tape-tabs on diapers, safety pins are now less of a problem. In the two to four year age group, vegetable materials such as nuts[4] and seeds[1] (watermelon, sunflower) are usually the offending agents. (Table 1).

The type of aspirated material is particularly important with respect to development of symptoms. For example, metallic foreign bodies may cause obstruction and injury because of their size and shape, but may also be harbored for years without consequence. Vegetable materials (e.g. peanuts), which may not cause major obstruction at the time of aspiration, produce subsequent symptoms because of their irritating properties. These materials, which contain certain oils, will produce mucosal irritation and edema and because of their hydrophillic properties, will swell to many times their original size producing further obstruction. Other vegetable substances such as rubber may induce bronchiectasis within a few weeks.[16] Foreign bodies occur more often in the right main-stem bronchus (Table 2) because the right bronchus branches off the trachea at a less acute angle than does the left main-stem bronchus.

Table 1
Nature of Foreign Bodies in Air Passages

	Ref. 4 N = 36	Ref.5 N = 108	Ref. 11 N = 76
Nuts	72%	59%	46%
Other Food	—	17%	32%
Other (pins, screws, plastic toys, etc.)	28%	24%	22%

Table 2
Location of Foreign Bodies in Air Passages

	Ref. 4 N = 55	Ref. 5 N = 108
Trachea	19%	10%
Right Bronchus	49%	45%
Left Bronchus	32%	42%
Both Bronchi	—	3%

The diagnosis of an inhaled foreign body in a child is often made on the initial medical evaluation. A previously healthy child usually presents with a recent history of persistent cough. Suspicion of an inhaled foreign body requires further specific inquiry. In most cases, the history of a past episode of sudden cough, with choking, vomiting, and/or cyanosis can be obtained from the parents. This acute episode may then be followed by minimal symptoms such as cough, wheezing, anorexia, malaise and fever, the latter occurring especially after inhalation of nuts.[5] In other cases, the initial episode is followed by a"symptomless" period; the cough ceases soon after the foreign body has become impacted and is forgotten. The child is subsequently brought to medical attention after secondary signs of airway obstruction and/or infection have developed, such as localized pulmonary infiltrates, which never clear completely despite several treatments with antibiotics. Other children may be mislabeled as "asthmatic" or "exercise intolerant" because of wheezing, secondary to some airway obstruction which may be aggravated with exercise. These children may then be treated for many years on bronchodilator therapy or on a hyposensitization program if allergies are thought to be responsible for the symptoms.

The physical examination is also important in confirming the diagnosis. In infants, the mobility of the mediastinum makes evaluation of tracheal deviation an important sign. Differences in expansion of the two sides of the chest may also be present. Overexpansion may be apparent on the affected side from a "check

From: Pediatric Pulmonary Section, Department of Pediatrics, Division of Respiratory Sciences, University of Arizona Health Center, Tucson, AZ 85724. Reprint requests to Dr. Taussig.

valve" obstruction or, alternatively, diminished expansion on the involved side from atelectasis may be noted. Decreased and delayed breath sounds or unilateral wheezing are also highly suggestive of a foreign body. Stridor on inspiration may be heard if the obstruction is located in the extrathoracic trachea or supraglottic area.

A suspected diagnosis of a foreign body based on the history and clinical findings usually requires additional tests for confirmation. Chest roentgenograms are obtained at full inspiration and full expiration. The radiographs may identify a radiopaque foreign body; however, most of the foreign bodies are radiolucent and undetectable. The differences in surface area and lucency of the lungs, as compared on inspiratory and expiratory films may be very useful. At full inspiration, little change is seen between the two lungs; at full expiration, the affected side appears hyperlucent and larger than the other side because of an imcomplete deflation and the mediastinum is shifted to the unaffected side. These observations can be enhanced by obtaining lateral decubitus radiographs alternating the downside. The side with the foreign body will show less deflation when dependent as compared to the uninvolved side. Lack of cooperation and rapid breathing in a young child may cause difficulties in obtaining inspiratory and expiratory films. In these children, fluoroscopy may document air trappings, poor diaphragm movement on the involved side, and deviation of the mediastinum towards the unaffected side during expiration. In some cases, atelectasis is evident if the airway remains totally closed during the respiratory cycle. In about 20% of patients, the initial chest film is normal;[1,9] in most of these cases, the offending agent was a mellon seed;[13] abnormalities on chest radiographs usually develop subsequently in these patients. Other diagnostic tools such as radioisotopic xenon inhalation,[8] or radionuclide lung scanning with perfusion of labeled microspheres[12] have assisted physicians in localizing foreign bodies. Rarely are these tests more specific than the usual chest radiographs. If stridor, hoarseness or a barking cough are present, anterior-posterior and lateral neck radiographs should also be obtained.

Treatment of a tracheobronchial foreign body requires early removal by bronchoscopy. Very few foreign bodies are cleared spontaneously by coughing.[10,11] Foreign bodies should be removed promptly to reduce local damage and distal parenchymal complications. A delay in bronchoscopy not only increases the risk of the procedure, but also decreases the chances of successful removal. Foreign bodies become more embedded as time passes. They become surrounded by mucosal edema and inflammation, and covered with granulation tissue. Even with a normal chest radiograph and minimal physical findings, early bronchoscopy is recommended when a foreign body is suspected. The "symptomless period" should not be forgotten!

Early removal may be a challenge for the skilled endoscopist[17] and anesthesiologist.[5] Under the best conditions, extraction may often be difficult, even with general anesthesia and a pediatric bronchoscope which allows for ventilation, magnified vision, and the insertion of appropriate forceps. The types of foreign bodies which make extraction troublesome are objects such as sharp, pointed pins and nails or rounded, fragile beans or peanuts which tend to crumble and pass into smaller airways. Embedded foreign bodies increase the risk of airway perforation. Because of these difficulties, airway foreign bodies should be removed only by the most experienced pediatric bronchoscopist-anesthetist team. In specialized medical centers, it appears that less than 5% of airway foreign bodies are not extractable by bronchoscopy. The majority of physicians agree that failure to remove a foreign body by the second bronchoscopy indicates the need for surgical removal.

Other forms of therapy such as postural drainage and percussion following an inhaled bronchodilator have been proposed in the past,[7] but at the present time, they probably have little or no advantage over bronchoscopy. While waiting for the endoscopist team, postural drainage and percussion may be considered, but must be performed in the ICU unit while monitoring cardiopulmonary signs. Resuscitation equipment and appropriate medications must be immediately available[11] in case a dislodged foreign body obstructs the trachea or glottis[15] or for severe reflex bronchospasm which may develop. After extubation, postural drainage and percussion with bronchodilators (oral and/or inhaled) should be performed to remove retained secretions and any small remaining particles of the foreign body. This can be done at home by the parents.

Potential complications following bronchoscopy include trauma to the glottis with prolonged manipulation. A postoperative chest film should be obtained to rule out a pneumothorax or atelectasis. Most of the complications are secondary to the delay between the inhalation and the removal of the foreign body. Long lasting airway obstruction and infection may lead to secondary bronchiectasis; this may occur in as many as 35% of patients[17] when extraction is delayed.

The best treatment is prevention of foreign body aspiration. Parental education is essential. Parents should be informed of the risks of foreign body aspiration. Adequate chewing should be stressed. Nuts or similar foods should not be offered to children until the permanent first molars develop (about 6-7 years). Parents should discourage children from placing small objects or sweets[13] into their mouths while playing, running, or sleeping. Toys with very small parts should be discouraged for children under five years of age.

The differential diagnosis of airway foreign bodies must include esophageal foreign bodies[14] which, in some countries, are more frequent than tracheobronchial foreign bodies.[16] The esophageal foreign body may become lodged in the cricoid region, compress the trachea or larynx, and produce dyspnea, stridor and

other physical findings typical of airway foreign bodies. In fact, foreign bodies may be found simultaneously in the airway and the esophagus. Food inhalation in debilitated, comatose patients or following anesthesia may produce respiratory distress and radiologic findings which may be attributed to an infectious process and not to the aspiration. A foreign body aspiration can closely mimic an asthmatic attack. However, a detailed past history and physical examination (the presence or absence of similar symptoms in the past, localized or bilateral physical findings, other signs of atopy, clearance of the symptoms and physical findings with bronchodilators) assist in the correct diagnosis. However, an asthmatic may demonstrate localized persistent pulmonary findings such as right middle lobe atelectasis secondary to viscous, tenacious mucous plugs. In these instances, a therapeutic medical trial may be indicated. If there is a suspicion of foreign body aspiration, bronchoscopy is indicated.

Airway foreign bodies are also frequently mislabeled as "pneumonia." A precise history of recent localized, persistent pulmonary symptoms in a previously healthy child appears suspicious. Further history will rule out neonatal and infancy pulmonary problems as well as immunologic and congenital abnormalities. Incomplete clearance with appropriate medical therapy should suggest a further diagnostic and therapeutic evaluation.

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Seminars in Dermatology

Angioedema and Urticaria Associated with Yellow Dye in Medications

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Introduction

The new F.D.A drug labeling requirement will go into effect on June 26, 1980 for drugs containing the yellow dye, FD&C Yellow No. 5 (tartrazine) which will include wording such as "contains FD&C Yellow No. 5 (Tartrazine) as a color additive," and will include in the package insert under "Precautions" the following wording: "This product contains FD&C Yellow No. 5 (tartrazine) which may cause allergic-type reactions (including bronchial asthma) in certain susceptible individuals. Although the overall incidence of FD&C Yellow No. 5 sensitivity in the general population is low, it is frequently seen in patients who also have aspirin sensitivity."

The August, 1979 FDA Drug Bulletin announced the new labeling requirement and reported that there are approximately 50,000 - 100,000 persons in the United States "allergic to Yellow No. 5, and an increasing number of medical reports indicate that susceptible individuals are primarily patients who also experience aspirin intolerance. Reactions to both aspirin and Yellow No. 5 include asthmatic symptoms, urticaria, angioedema, or nasal symptoms."

The case report which follows is an example of the severity of this problem when it is not realized by the physician. The discussion which follows demonstrates that this intolerance which mimics an allergic mechanism is of unknown etiology which may be due to altered metabolism or an immunologic reaction.

From: Section of Clinical Immunology, University of Arizona College of Medicine, Tucson, AZ 85724. Reprint requests to Dr. Pinnas.

Case Report

M.V., a 36 year old white female was referred to the Allergy Clinic at the Arizona Health Sciences Center in May 1978 with urticaria of six months duration. The urticaria began on her lower legs and within a month became generalized. It recurred daily and was most prominent in early morning. In addition, she experienced periorbital swelling and conjunctival irritation with some episodes accompanied by mild wheezing.

She had no prior history of asthma, food intolerances or other allergic conditions. She took aspirin only rarely, but she revealed that three months prior to her first clinical visit she developed marked facial swelling the same day she had ingested 600 mg of aspirin.

Past history included a hysterectomy and oophorectomy in 1975 for endometriosis, after which she was placed on Premarin 1.25 mg daily, excluding the last five days of each month.

Previous therapy of her urticaria included courses of chlorpheniramine, Benadryl and promethazine. For two months prior to her visit she had taken Atarax 25 mg up to four times daily and prednisone, 20 to 40 mg each morning. An exclusion diet avoiding beans, cantaloupe, cheese, chocolate, eggs, nuts, strawberries, tomatoes and watermelon were instituted. On the above regimen there was no improvement.

Physical exam revealed raised, erythematous plaques from 5 to 20 millimeters in diameter on her legs, back and abdomen. No periorbital swelling was present. The blood count revealed a WBC of 6,000 with a normal differential (2% eosinophils). A Wintrobe sedimentation rate was 16. Chest radiograph, as well as PPD and coccidiodin skin tests, were negative.

Because of the questionable history of aspirin intolerance, and after "informed consent" was obtained, the patient was given an oral dose of 600 mg of aspirin. Within fifty minutes she developed perioral and facial swelling. Baseline spirometry was unchanged. Administration of epinephrine 1:1000 solution, 0.2 cc subcutaneously promptly eliminated the facial swelling as well as the urticaria which had been present before the challenge.

She was placed on a diet free of salicylates, benzoates and tartrazine dye. Premarin was precribed as two brown 0.625 mg tablets daily in place of one yellow 1.25 mg tablet. Azatadine maleate 1 mg and terbutaline 5 mg were prescribed for use up to three times daily. Within three weeks the urticaria totally resolved and prednisone and other medications were tapered and discontinued. She now notes only an occasional hive once or twice monthly which she attributes to stress. These resolve spontaneously or require a simple antihistamine tablet.

Comment

This patient is typical of a number of patients seen in our clinic who regularly use medications containing tartrazine dye. She was receiving premarin tablets, 1.25 mg, a commonly prescribed medication in gynecologic practice, the coating of which contains a yellow orange azo dye, tartrazine (FD&C #5). Tartrazine was also present in the antihistamines that she had been taking.

Certain patients commonly seen in an allergy practice react adversely to aspirin administration and many reports of adverse effects from aspirin and tartrazine have appeared in the allergy literature. Some aspirin-sensitive asthmatics develop nasal polyps and severe asthma which may require steroid therapy, even in the absence of aspirin administration. Challenge with an oral dose of aspirin in these patients could result in severe, or even fatal, asthma attack. In other patients, another syndrome of urticaria and angioedema may develop after aspirin administration. In studies of patients with chronic urticaria up to 50% of patients have shown exacerbations when given sufficiently large doses of aspirin, i.e. one to five 300 mg tablets.[1] In the past ten years it has been observed that some aspirin-sensitive patients with either asthma or urticaria experience similar symptoms following the ingestion of tartrazine. In studies of aspirin-sensitive patients, the number who reacted to tartrazine ranged from 8-88%.[2,3]

Sensitivity to tartrazine dye is not limited to aspirin-sensitive patients, however, since some individuals with no adverse reactions to aspirin by history or challenge develop urticaria or angioedema after ingesting tartrazine.[3]

Patients who react adversely to aspirin also may not tolerate anti-inflammatory drugs such as indomethacin, aminopyrine, naproxen or ibuprofen.[1]

Asthma or urticaria resulting from the adminstration of the above mentioned drugs may not be mediated through an immunologic mechanism because: 1) involvement of IgE antibody has not been proven, 2) aspirin, indomethacin, and aminopyrine are known to inhibit prostaglandin synthesis, 3) some evidence suggests that tartrazine may act by a similar mechanism. Since prostaglandin compounds affect bronchial smooth muscle and vascular permeability, Vane has postulated that inhibition of prostaglandin synthesis may affect the balance of these compounds resulting in asthma or urticaria in susceptible individuals.[4]

Clinically, drugs containing tartrazine can be avoided since colorings are used only for identification purposes. For patients with suspected tartrazine sensitivity, the physician can substitute other forms of an indicated drug, such as white Valium (2 mg) tablets for yellow (5 mg) tablets, or prescribe white or pink oral contraceptives in place of yellow ones. Pills which are green, orange, red or blue may also contain tartrazine, so the physician should consult the appropriate drug company representative or one of the published lists of medications containing this dye.[5] Paradoxically, antihistamines which are often prescribed to treat urticaria may contain tartrazine. This fact has spurred recent efforts to remove tartrazine from antihistamine

and bronchodilator preparations. Dietary sources of the dye include margarine, orange drinks, candy and cake mixes. Patients on tartrazine-free diets should avoid all foods and drugs containing artifical colorings unless the label specifically states that another agent, such as carotene, is used.

In summary, this 36 year old female had chronic urticaria and angioedema which could be precipitated by salicylates and tartrazine dye, and two of her medications contained the dye. Her case underscores the improtance of a careful drug and dietary history in patients with chronic urticaria. In this patient attention to these details abolished the recurrent urticaria and angioedema, and side effects of prolonged administration of corticosteroids were avoided by eliminating the offending agent.

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Seminars in Endocrinology and Metabolism

Hypocalcemia

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Editor:
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The presentation of hypocalcemia can be very dramatic with signs of tetany or it can be very subtle with symptoms such as irritability, depression, poor memory and weakness. Vitamin D and parathyroid hormone are the two major hormones responsible for maintaining a normal serum level.

Vitamin D. Vitamin D_3 is a hormone which is synthesized in the skin or can be obtained from various dietary sources. Vitamin D_3 (cholecalciferol) must first pass through the liver where it is hydroxilated to form 25-hydroxycholecalciferol (25-HCC). Next, 25-HCC is converted to 1,25-dihydroxycholecalciferol (1,25-DHCC) in the kidneys. This final step requires the presence of parathyroid hormone. Also, low levels of serum phosphate have been shown to actively stimulate the conversion of 25-HCC to 1,25-DHCC. The principle action of 1,25-DHCC is to maintain a normal serum calcium level by regulating the absorption of calcium from the gastrointestinal tract and to a lesser extent by its action on bone.

Parathyroid Hormone (PTH). This hormone acts on bone to release calcium and also on kidneys to increase the reabsorption of calcium as well as assist in the conversion of 25-HCC to 1,25-DHCC. Magnesium has a positive effect on the synthesis of parathyroid hormone. If a low level of magnesium is found, hypocalcemia can occur. The renal excretion of phosphate is also partially dependent on PTH by increasing the loss of phosphate from the kidneys. Thus, patients with hyperparathyroidism have increased phosphate excretion and conversely in hypoparathyroidism reduced phosphate loss is found.

Investigation. The investigation of hypocalcemia requires a very careful clinical history including such factors as neck surgery for thyroid or parathyroid disease, symptoms of malabsorption, family history of hypocalcemia and short stature, a past history of bone fractures or unusual alignment of bone, bowel surgery, renal disease, alcohol abuse, unusual eating behavior, the use of drugs such as anti-convulsant medications, radiation therapy to the thyroid gland, etc.

Unless clearcut hypocalcemia exists, two or three calcium levels should be determined prior to therapy. Serum phosphate levels can be helpful in distinguishing diseases caused by deficiencies of Vitamin D or deficiencies of PTH. If the serum phosphate level is high, it would suggest hypoparathyroidism and if the serum phosphate level is low, it would suggest a disorder in Vitamin D. Alkaline phosphatase is elevated when there

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is active turnover of bone as is seen in Vitamin D deficiency states. The measurement of PTH is necessary to diagnose hypoparathyroidism. If the PTH level is high, then it can be assumed that the hypocalcemia is not due to hypoparathyroidism, with the rare exception of pseudohypoparathyroidism. Urinary cyclic AMP measurements can distinguish hypoparathyroidism from pseudohypoparathyroidism. Since PTH increases the level of urinary cyclic AMP, the patients with high PTH levels and low urinary cyclic AMP levels without kidney impairment would have pseudohypoparathyroidism. Serum magnesium levels should be obtained. Measuring 1,25-DHCC is at this point possible but not yet commercially available.

Hypoparathyroidism. In idiopathic hypoparathyroidism, hypocalcemia, hyperphosphatemia and hypocalcuria exist. Cerebral calcification and poor dentition are often found. This disorder may occur in association with Addison's Disease or other immune disorders. Acquired hypoparathyroidism can include infarction of a parathyroid adenoma or neck surgery for parathyroid or thyroid diseases. With the exception of pseudohypoparathyroidism, the level of parathyroid hormone is reduced.

Renal Disease. Hypocalcemia can occur in both acute and chronic renal failure. Since the kidney cannot convert Vitamin D to its active hormone, absorption of calcium in the GI tract is impaired leading to hypocalcemia and secondary hyperparathyroidism. In these patients, both osteomalacia and subperiosteal reabsorption of calcium can occur. High serum phosphate levels are found because of impaired renal loss and therefore differ from other disorders of reduced 1,25-DHCC when the serum phosphate level is low.

Malabsorption. In disorders of the gastrointestinal tract which do not allow adequate absorption of calcium even though there is an adequate level of 1,25-DHCC, hypocalcemia will occur. Since the parathyroid hormone is normal or elevated, the level of serum calcium may be only minimally reduced. However, with the action of parathyroid hormone causing increased urinary phosphate loss in the urine and perhaps reduced phosphate absorption of the GI tract, the patient will have reduced serum phosphate levels. In these patients, then, mild hypocalcemia is accompanied by low serum phosphate levels and may be accompanied by increased levels of alkaline phosphatase. More profound hypocalcemia can occur if hypomagnesemia should also be present by reducing the secretion of parathyroid hormone in which case both calcium and phosphate are low. This situation can be seen in a patient with bowel surgery, such as an intestinal bypass.

Magnesium Deficiency. In addition to the surgery on the GI tract, persons who consume large quantities of alcohol are prone to develop hypomagnesemia. There has been evidence to suggest that neonatal tetany may be at least partially the result of hypomagnesemia. The only successful method of therapy is the replacement of magnesium.

Vitamin D Deficiency or Resistance. These are uncommon and are associated with mild hypocalcemia and significant hypophosphatemia as well as elevations of alkaline phosphatase.

Drugs. Hydantions such as Dilantin can cause hypocalcemia by increasing the degradation of Vitamin D in the liver. All patients on hydantions for long periods should periodically have calcium levels measured and Vitamin D supplemented if necessary. Other drugs (mithramycin, gentamicin, glucocorticoids, antimetabolites, glucagon) have been shown to cause hypocalcemia.

Treatment. The mainstay remains Vitamin D and calcium. Today the active hormone (1,25-DHCC) is commercially available under the trade name Rocaltrol. It is officially approved for the treatment of hypocalcemia in renal disease. It has, however, been used successfully in many other causes of hypocalcemia. The use of standard Vitamin D_3 is still effective but frequently high doses are needed. In addition, calcium supplements can be given orally. After treatment has begun, calcium measurements should be obtained periodically to determine success of therapy and also changes in dosage regiment. Magnesium supplements will occasionally be necessary. Caution should be exercised to make sure that hypercalcemia does not occur from the treatment.

References available upon request.

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Seminars in Gastroenterology and Liver Disease

Ascites

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Ascites refers to accumulation of fluid in the abdomen. Other conditions that must be differentiated from ascites are that of abdominal cysts, distention of the bladder, generalized obesity, and pregnancy. The volume of ascites that can be detected clinically is generally greater than 400 to 500 ml. The physical diagnosis of ascites rests on finding flank dullness, abdominal distention, shifting dullness and the "puddle sign," Which is dullness around the umbilical region while the patient is on "all fours."

Once ascites is recognized its etiology must be sought. Although cirrhosis of the liver is the most common cause in the U. S., cardiac disease (congestive heart failure), myxedema, metastatic carcinoma with hepatic and peritoneal involvement, infectious etiologies and vasculidities are other conditions frequently associated with ascites.

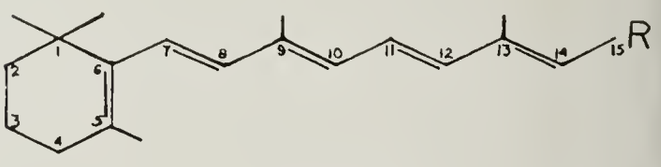
Ascitic fluid is generally considered to be an ultrafiltrate of plasma and does derive its protein from both the circulation, lymphatic drainage, and actual protein production from liver "wheeping." Multiple factors are necessary for the production of ascites which include primarily liver disease, hypoalbuminemia, and portal hypertension. Combinations of all these three appear to be necessary for the final production of ascites.

The remainder of this paper will concentrate on the diagnostic evaluation of ascitic fluid.

All patients presenting to the hospital with newly diagnosed ascites or with known liver disease with recent decompensation and ascites, should have their ascitic fluid inspected. This requires the removal of between 20 and 30 ml. A transudate generally is straw colored, however, at times it may be bile stained. Observing for blood or for a milky white fluid can provide important clues to the differential diagnosis. In addition to actual inspection of the fluid, the fluid should be sent to the laboratory for white cell count and (WBC) differential, as well as measurement of the concentrations of amylase, LDH, albumin, triglycerides, and total protein. Fluid should be sent for culture, cytology, and specific gravity. In favor of an exudate is a fluid with a specific gravity of 1.012 or more and a total protein content of 2 to 3 grams % or more. LDH levels have been helpful in differentiating exudative fluids of cirrhotic origin from those of neoplastic causes. Most uncomplicated liver patients had LDH levels less than 350 SU while 60% of patients with neoplastic ascites had LDH levels greater than 500 SU. Infectious exudative fluids usually have WBC greater than 500 CU. mm. with polymorphonuclear cells comprising more than 50% of the cells. If the WBC is greater than 500 CU. mm. and mononuclear cells predominate, then tuberculosis, malignant and pancreatic ascites should be considered. High amylase levels may reflect pancreatic origin of the fluid, while elevated bilirubin levels not accompanied by serum elevations may represent pseudocyst formation and/or biliary fistula. Eosinophils within the ascitic fluid may signify the presence of eosinophilic gastroenteritis, vasculitis, or parasites. Ascitic triglyceride concentration greater than 400 mg/100 ml is compatable with the diagnosis of chylous ascites, most commonly of pancreatic neoplastic origin. The ascitic triglyceride generally parallels the plasma, but in cases of chylous ascites, the value is usually twice that of the plasma level. Cytology is important and at times ovarian cells and metastatic malignant cells can be seen. When ascitic fluid suggests disease other than primary cirrhosis, i.e. - exudative, marked mononuclear cell predominence, or malignant cell positivity, laparoscopy with direct visualization of the peritoneum, serosa liver, and the pelvis would appear to be indicated for a more definitive diagnosis. Peritoneal biopsy using the cope needle may be helpful in infectious and neoplastic states.

In summary, it should be evident from the above that the most likely cause of ascites is chronic liver disease. Once acites appears in chronic liver disease there is a 50% mortality in five years. It is therefore essential that other superimposed causes be exluded before setting on cirrhosis as the cause. Careful examination of ascitic fluid is therefore very important.

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R	Derivatives
CH_2OH	Retinol
CHO	Retinal
COOH	Retinoic Acid
$CH_2OCOC_{15}H_{31}$	Retinyl Palmitate

Figure 1
Retinoid derivatives

Oncology

Vitamin A and Cancer

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Introduction

Important advances in the treatment of childhood and mesenchyma-derived advanced cancers (e.g., lymphomas) have been made by the judicious use of surgery, radiation, and chemotherapy. However, the majority of epithelium-derived tumors in adults have remained refractory to therapeutic intervention. Although new chemotherapeutic agents may be discovered that have significant activity against epithelial tumors, past experience suggests that alternative directions to classical cytotoxic chemotherapy should also be sought. The concept of biological modification of tumor growth, either by manipulation of host immune defenses or by alteration of the differentiation capacity (with resultant inhibition of cellular proliferation), has long been extant in tumor biology. Only recently, however, has the use of biological modifiers been examined. Biological modifiers currently being studied for therapeutic activity include host immune modulators such as BCG, *C. parvum*, levamisole, and interferon, and other biological modifiers which act more directly on tumors such as inhibitors of metastasis (e.g., vitamin C, protease inhibitors) and inducers of differentiation (e.g., DMSO, viruses).

Vitamin A and its natural and synthetic derivatives comprise a group of compounds called retinoids which produce a wide variety of immunological modifications and effects on cellular proliferation and differentiation.[1,2] We will briefly review in this month's column the evidence which suggests that the retinoids are potent biological modifiers, the possible uses of retinoids in oncology, and the side effects, toxicity, and problems that may arise from the use of retinoids as therapeutic agents.

Pharmacology and Toxicology

The structure of vitamin A alcohol (retinol) is shown in Figure 1. Several hundred derivatives of this primary structure exist with modifications made at the C-20 position, alterations of the isomeric configuration, and additions to the aromatic ring. Vitamin A is an essential nutrient which is necessary for normal reproduction, vision, and epithelial cell differentiation. Intracellularly, the active form appears to be the natural vitamin A alcohol, although *β-trans* retinoic acid has been found as a metabolite in epithelial tissues and both intracellular retinol and retinoic acid binding proteins have been detected.[3] Although only the natural vitamin A alcohol can support reproductive and visual processes, a wide

From: Section of Hematology and Oncology, Department of Internal Medicine, University of Arizona Health Sciences Center, 1501 North Campbell Avenue, Tucson, Arizona 85724. Dr. Meyskens is Assistant Professor of Medicine.

range of synthetic retinoic acid derivatives can substitute for the natural β-all *trans* retinoic acid in its effects on epithelial tissues. The most important biological observations have been made with β-all *trans* retinoic acid, 13-*cis* retinoic acid, and retinol (vitamin A alcohol) and retinyl palmitate. In this review, these derivatives of vitamin A will be collectively referred to as retinoids. It is important to emphasize that the individual retinoids may induce diverse actions in particular tissues, as do individual corticosteroids, and that only for retinol are the biochemical and pharmacological pathways understood.

In most higher animals, including man, vitamin A cannot be endogenously synthesized and must be acquired through the diet. After entry into the blood stream through the gut lumen, it is transported to the liver via lymphatics and bound to a prealbumin-retinol binding protein complex and either transported to its sites of utilization or stored in the liver in the Ito cell. Excess vitamin A alcohol causes hepatic cell damage and possibly hepatic fibrosis. Consequently, major emphasis has been placed on the development of congeners, such as derivatives of vitamin A acid which are not concentrated in the liver.[4] In addition to potential hepatic toxicity, long-term administration of retinoids can cause severe skin, hair, bone, and reproductive changes.

Biological Effects

Immune System

Vitamin A deficiency results in a nutritionally deprived state with susceptibility to a variety of acute and chronic infections as a result of diffusely abnormal humoral and cellular immunity. Extensive experiments in animals indicate that retinoids increase cell-mediated cytotoxicity.[5,6] A few studies also show that retinoids can restore lymphocyte PHA-responsiveness in terminal cancer patients.[7]

Membrane Alterations

Retinoids have two important effects on cellular membranes. They labilize cellular membranes (especially the lysosomes), and they are incorporated into cellular membranes, thereby changing the glycoprotein and glycolipid orientation of the cell surface.[8] The labilization of membranes probably plays an important role in the toxicity of these agents. Recent evidence suggests that the alteration of the cell surface may have two important consequences: altered antigenicity of tumor cells and increased cellular adhesion of neoplastic cells.

Antitumor Effects

Preneoplasia

It has long been known that one of the consequences of vitamin A deficiency is that a diffuse dysplasia appears in many epithelial tissues which can be reversed with vitamin A. Extensive experiments in animals indicate that carcinogen-induced preneoplastic lesions of the trachea, lung, bladder, and buccal mucosa can be reversed by the oral or intraperitoneal administration of retinoids.[9,10] *In vitro* studies also show that the phenotypic expression of radiation- or virus-induced transformation can be suppressed in the constant presence of retinoid. Careful *in vitro* studies of the interaction of a phenotypic transformation factor induced by an RNA tumor virus demonstrate that retinoids can inhibit the release of the transformation factor and thereby maintain phenotypic normality.[11] Taken together, the *in vitro* and *in vivo* data suggest that retinoids may function as natural antipromoters of transformation and may be useful in reversing preneoplastic lesions of diverse origin.

Neoplasia

Studies of numerous animal systems both *in vitro* and *in vivo* show that the growth of established epithelial tumors and cell lines can be inhibited by retinoids[12] and that the phenotypic expression of carcinogen-induced tumors can be suppressed in the constant presence of retinoid.[7]

More extensive studies of murine melanoma demonstrate that the inhibition of cellular proliferation is accompanied by a marked differentiation response—the synthesis of melanin.[8] We have also recently shown in our laboratory that retinoids can inhibit proliferation in cultured human melanoma cell lines.[13] In a recent study we have also demonstrated that melanoma colony formation can be significantly reduced in cells obtained from fresh biopsies of human melanoma tissue.[14] These latter results were remarkable in that the cells were exposed to the retinoid for only one hour and the effect of the various retinoids were different in any one patient sample. Although the mechanisms by which vitamin A produces a reduction in melanoma colony formation are unclear, the retinoids are generally not regarded to be cytotoxic agents. These results suggest that retinoids may have antineoplastic effects against established tumors different from those of classical chemotherapeutic agents.

Potential Uses of Retinoids in Clinical Oncology

Preneoplasia

Extensive *in vitro* and *in vivo* data suggest that retinoids will be effective in reversing preneoplasia in numerous organ sites. Presently trials involving their use as an antineoplastic agent in patients with surgically cured or recurrent preneoplastic urinary bladder carcinoma are being conducted in selected institutions.

Neoplasia

The potent immunological stimulation properties of these agents and their ability to induce differentiation and inhibit cellular proliferation in many tumor types suggest that vitamin A analogues may be most efficacious in the setting of low tumor cell numbers. Whether retinoids can be effective in established tumors will require broad-based clinical trials. Little is known about the toxicity of natural vitamin A, but because of its potential toxicities it is unlikely that retinol could be used for clinical trials. Studies of the less hepatotoxic retinoic acids at high dose may be more productive.

Table 1
Studies of Retinoids and Malignancy
At AHSC

Disease	Prior Treatment	Randomizaton
Adjuvant*		
Melanoma	Surgically cured	BCG ± vitamin A
Head and neck carcinoma	Surgical ± radiation	Vitamin A vs. no treatment
Duke's C colon carcinoma	Surgical	Chemotherapy + Vitamin A
Advanced		
Vitamin A	(all prior treatment acceptable)	Phase I-II
13-*cis* retinoic acid		Phase I-II

**A lung carcinoma adjuvant trial is also being designed.*

Trials at the University of Arizona

The role of vitamin A as an adjuvant agent is being explored in several clinical settings (Table 1). A broad Phase I-II study of vitamin A and 13-*cis* retinoic acid in patients with advanced refractory malignancies has also been initiated. These studies should help to answer the important question of whether biological modifiers such as the retinoids can impact upon the treatment of drug-resistant neoplasms. It should be emphasized that the use of vitamin A and its derivatives as therapeutic modalities (i.e., used at doses greater than 10,000 units/day) should be done only in an investigational setting until the toxicology and therapeutic efficacy of these agents are well understood.

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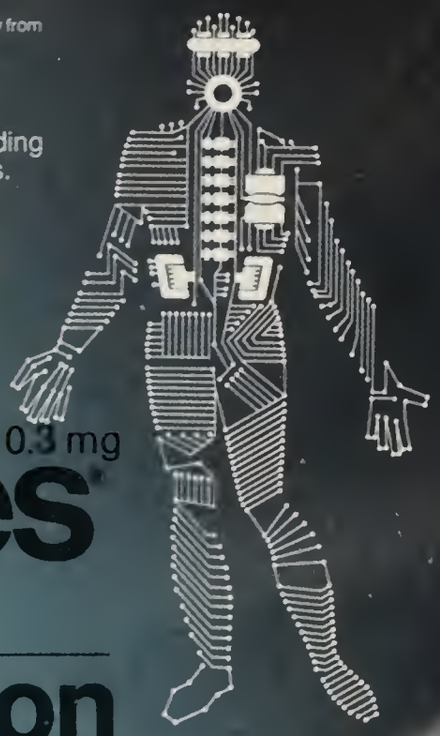
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*Central alpha-adrenergic stimulation decreases sympathetic outflow from the brain, as shown in animal studies.

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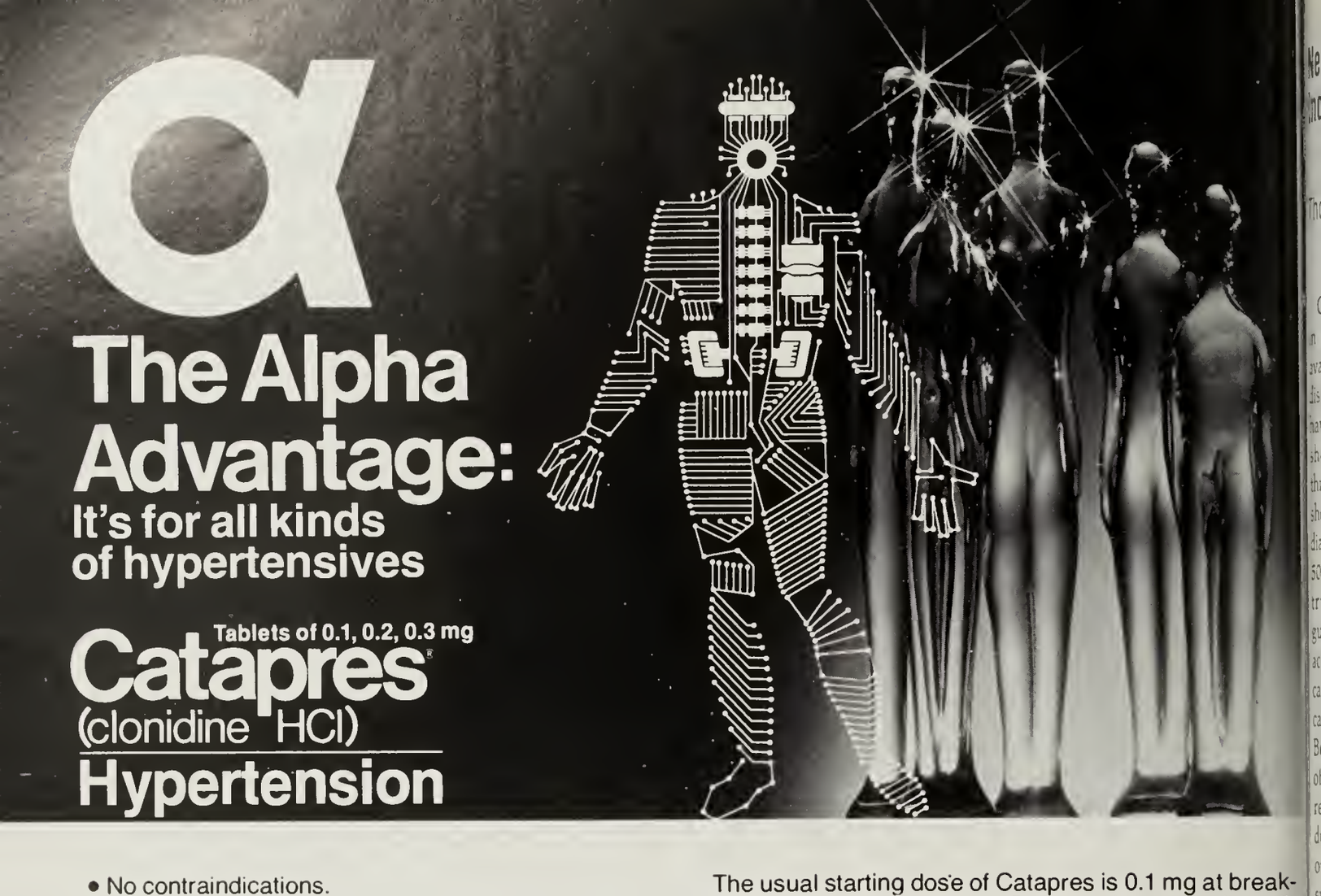
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Precautions: When discontinuing Catapres (clonidine hydrochloride), reduce the dose gradually over 2 to 4 days to avoid a possible rapid rise in blood pressure and associated subjective symptoms such as nervousness, agitation, and headache. Patients should be instructed not to discontinue therapy without consulting their physician. Rare instances of hypertensive encephalopathy and death have been recorded after cessation of clonidine hydrochloride therapy. A causal relationship has not been established in these cases. It has been demonstrated that an excessive rise in blood pressure, should it occur, can be reversed by resumption of clonidine hydrochloride therapy or by intravenous phentolamine. Patients who engage in potentially hazardous activities, such as operating machinery or driving, should be advised of the sedative effect. This drug may enhance the CNS-depressive effects of alcohol, barbiturates and other sedatives. Like any other agent lowering blood pressure, clonidine hydrochloride should be used with caution in patients with severe coronary insufficiency, recent myocardial infarction, cerebrovascular disease or chronic renal failure.

As an integral part of their overall long-term care, patients treated with Catapres (clonidine hydrochloride) should receive periodic eye examinations. While, except for some dryness of the eyes, no drug-related abnormal ophthalmologic findings have been recorded with Catapres (clonidine hydrochloride), in several studies the drug produced a dose-dependent increase in the incidence and severity of spontaneously occurring retinal degeneration in albino rats treated for 6 months o longer.

Adverse Reactions: The most common reactions are dry mouth, drowsiness an sedation. Constipation, dizziness, headache, and fatigue have been reporte Generally these effects tend to diminish with continued therapy. The followin reactions have been associated with the drug, some of them rarely. (In som instances an exact causal relationship has not been established.) These include Anorexia, malaise, nausea, vomiting, parotid pain, mild transient abnormalities i liver function tests; one report of possible drug-induced hepatitis without icteru and hyperbilirubinemia in a patient receiving clonidine hydrochloride, chlo thalidone and papaverine hydrochloride. Weight gain, transient elevation of bloo glucose, or serum creatine phosphokinase; congestive heart failure, Raynaud' phenomenon; vivid dreams or nightmares, insomnia, other behavioral changes nervousness, restlessness, anxiety and mental depression. Also rash, an gioneurotic edema, hives, urticaria, thinning of the hair, pruritus not associate with a rash, impotence, urinary retention, increased sensitivity to alcohol, dryness itching or burning of the eyes, dryness of the nasal mucosa, pallor, gynecomastia weakly positive Coombs' test, asymptomatic electrocardiographic abnormalitie manifested as Wenckebach period or ventricular trigeminy.

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New Approaches to Bladder Cancer: Individualized Patient Chemotherapy

Thomas H. Stanisic, M.D.

Chemotherapy currently plays a relatively minor role in the effective treatment of bladder cancer. Most available agents have not been adequately tested in this disease and those that have been evaluated generally have been associated with low clinical response rates of short duration. Cyclophosphamide, adriamycin, thiotepa, methotrexate, and mitomycin C have all shown some activity against bladder cancer, but only *cis*-diamminedichloroplatinum (*cis*-platinum) has shown a 50% objective response rate in any controlled clinical trial.[1,2] One new drug, methyl-glyoxal bis-guanylhydrazone (MGBG), may prove to be more active,[3] and has recently entered clinical trial for bladder cancer. However, in an individual patient with bladder cancer, response to any of these drugs is unpredictable. Because of these low response rates and unpredictability of individual response, many physicians and patients reject chemotherapy for bladder cancer even when the disease is widely metastatic and no other treatment option is available. For these same reasons, adjuvant systemic chemotherapy is not routinely practiced in conjunction with radiation and surgery for less advanced disease.

Similar problems have faced physicians treating other malignancies, but recent research advances offer some hope of progress in reaching solutions to these problems.

Two years ago in this column Dr. Sydney Salmon of the University of Arizona Cancer Center, discussed the development of an *in vitro* colony-forming assay for human tumors.[4] In this system, tumor biopsy explants are exposed to anti-cancer drugs *in vitro* and a quantitative measure of an individual's sensitivity to specific chemotherapeutic agents can be obtained.[5,6] Studies to date at the University of Arizona Cancer Center (193 clinical trials in 96 patients with myeloma, melanoma, ovarian cancer, and other neoplasms) indicate that drug testing in this *in vitro* system can predict *in vivo* drug sensitivity with over 60% accuracy and drug resistance with 97% accuracy.[7,8] Investigators at the National Cancer Institute in Bethesda, Maryland, and at the University of Texas, San Antonio, have recently provided independent evaluation of the ability and accuracy of this assay system.[8]

For *in vitro* drug sensitivity testing to be practically applicable to a tumor, three requirements should be met: 1) the cancer must be readily accessible to biopsy with minimum patient morbidity; 2) the tumor must grow readily in this particular *in vitro* system, and 3) the tumor should be one in which standard therapeutic options are limited.

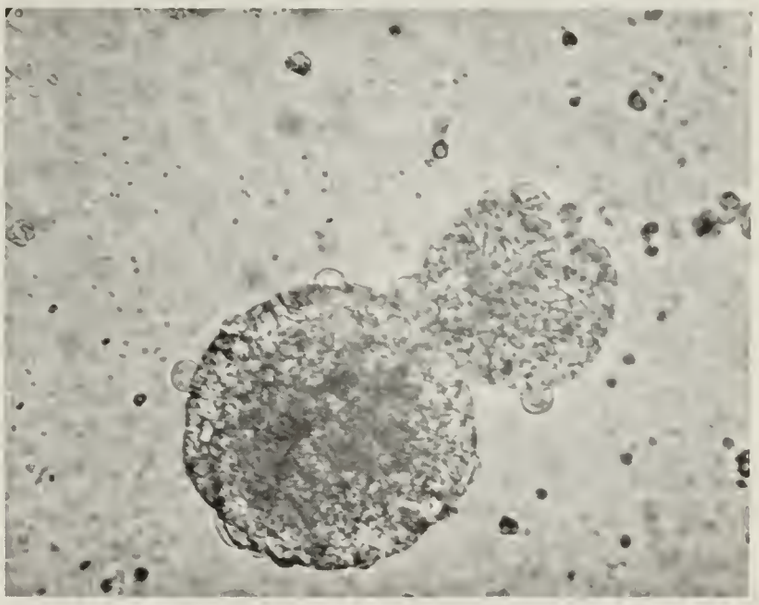


Figure 1
Two bladder cancer colonies growing side by side in soft agar approximatley 2 weeks after biopsy. (Original magnification, 100X; inverted phase microscope.)

Bladder cancer fulfills each of these criteria. During the last 18 months, we have studied over 20 bladder tumor biopsy specimens obtained by transurethral resection.[9] In our laboratory, growth has been sufficient to perform *in vitro* drug sensitivity testing in 75% of patients studied. In addition, bladder irrigation specimens from several patients with carcinoma *in situ* of the bladder have also been examined and all but a single contaminated specimen have grown vigorously.[10] *In vitro* drug sensitivity testing of such specimens has demonstrated marked patient-to-patient variation in response to *cis*-platinum, mitomycin C, adriamycin, and thiotepa. We do not know whether drug sensitivity or resistance measured *in vitro* for bladder cancer will predict *in vivo* tumor response in the patient, but, on the basis of the studies in melanoma, myeloma, and ovarian cancer cited above, a high test-tube/patient correlation would be expected. We have, therefore, initiated clinical trials correlating *in vitro* and *in vivo* drug response with both systemic and intravesical chemotherapy for bladder cancer.

Systemic Therapy: Eligible patients should have residual tumor present in the bladder or urethra which is accessible to transurethral biopsy and they should be candidates for general or spinal anesthetic. Measurable pelvic or extra-pelvic metastases should be present. Individuals who are candidates for initial chemotherapy and those who have progressed after previous chemotherapy are eligible for study. After the patient's bladder tumor has been biopsied, it takes 2-3 weeks to learn the results of the sensitivity tests. (See Figure 1.)

All appropriate patients who have not been previously

From: University of Arizona Health Sciences Center, Department of Surgery/Urology (Dr. Stanisic, Assistant Professor), Tucson, AZ 85724.

treated with chemotherapy will receive cyclophosphamide plus *cis*-platinum. If the patient has stable disease or a response to this regimen, it will be continued. If tumor progression occurs, the next drugs used will be based on the results of *in vitro* chemotherapy sensitivity studies. In patients who have failed previous chemotherapy, secondary agents will be chosen solely on the basis of sensitivity testing.

Intravesical Therapy: We will evaluate intravesical chemotherapy individualized on the basis of *in vitro* drug sensitivity testing in patients with carcinoma *in situ* who are not candidates for radical surgery. The urothelium will be sampled by bladder irrigation and random biopsy under general or spinal anesthetic. Thiotepa, mitomycin C, and adriamycin will be tested *in vitro*.

We believe that new aprroaches are necessary if chemotherapy is to be utilized in the treatment of bladder cancer with maximum effectivenes. The above described clinical studies are just beginning. Hopefully, with the assistance of the physicians of Arizona, patient accrual during the next year will be such that we will be able to effectively evaluate the usefulness of *in vitro* drug sensitivity testing as a clinical tool in the treatment of bladder cancer.

Appropriate patients for this study may be referred by calling Thomas Stanisic, M.D., Assistant Professor of Surgery/Urology, at the University of Arizona Health Sciences Center, Tucson, Arizona. The telephone number is (602) 626-6895.

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Errata

Arizona Medicine Vol. 37, No.1, page 30, Oncology Section, article entitled *Stage I Cancer of the Endometrium* by Earl A. Surwit, M.D., Table 1 was printed incorrectly. It appears corrected below.

Table 1
Stage I - FIGO (1970)

Carcinoma is Confined to the Corpus:
Stage IA - Uterine cavity 8 cm. or less
Stage IB - Uterine cavity greater than 8 cm.
Differentiation:
Grade 1 (G1) - Highly Differentiated Adenomatous Carcinoma
Grade 2 (G2) - Differentiated Adenomatous Carcinoma with solid areas.
Grade 3 (G3) - Predominantly solid or entirely undifferentiated carcinomas.

Ear Reattachment by the Pocket Principle

James M. Clayton, M.D.
Jack A. Friedland, M.D.

Successful attempts to reattach a severed ear or even a major portion thereof have been rarely reported in the surgical literature.[1,2] Smaller ear segments, when reattached, have a better chance of survival as a composite graft than larger ones. As an aid in achieving more dependable survival in reattaching subtotally severed ear parts Mladick, et al[3,4] have advocated dermabrading the amputated ear part before reattaching it to its stump. The reattached portion of the ear is then buried in a subcutaneous postauricular pocket. Revascularization of the replanted ear part is enhanced by dermabrasion.

Case Report

A 12-year old boy was brought to the emergency room of Maricopa County General Hospital on January 26, 1979. Two hours earlier the superior aspect of the left ear had been bitten off by a dog, while the child was waiting for a school bus (Figure 1). The severed ear part had been retrieved and brought in with the patient. It was cleaned and then placed in saline moistened sponges while preparations were made for surgery (Figure 2).

Four hours after the injury the patient was taken to the operating room where, under local anesthesia (1% lidocaine with 1:200,000 epinephrine) and intravenous sedation using diazepam, the reattachment procedure was carried out. The amputated portion was cleansed with saline, lightly dermabraded to remove only the epidermis, reattached with interrupted 5-0 clear nylon sutures in the cartilage and interrupted 6-0 black nylon sutures in the skin, and then buried in a subcutaneous postauricular pocket (Figure 3). A small suction catheter was used for two days postoperatively, and the ear was coated with gentamycin ointment. Intravenous Kefzol, 1 gram every six hours, was administered for the first 24-hours of hospitalization, and then Velosef 250 milligrams every six hours, was given for two additional days.

From: 421 North 18th Street, Ste 111, Phoenix, AZ 85006. James M. Clayton, M.D., former resident in the Phoenix Plastic Surgery Residency Program, is now in private practice in Provo, Utah.



Figure 1
Superior portion of ear amputated by dog bite.



Figure 2
Amputated ear segment.



Figure 3
Reattached ear segment in subcutaneous pocket.

Ten days later, under general anesthesia, the lateral aspect of the ear was easily removed from the pocket, leaving the medial aspect undisturbed. Exposed sutures were removed. The lateral aspect of the replanted part was pink and viable. Postoperatively it was kept coated with gentamycin ointment as epithelialization rapidly took place.

One week later the medial aspect of the ear was taken out of the pocket, releasing the ear from the side of the head. The pocket incision was closed. The medial aspect was allowed to re-epithelialize under a coating of gentamycin ointment.

The results at six months are very satisfactory with preservation of the contours of the ear and good color match (Figure 4).



Figure 4
Results in Six months

Discussion

The principle used in this technique of dermabrasion of the amputated part is based on the premise that the surface contact for vascular nourishment of the reattached part is greatly increased by dermabrasion. This allows survival of the replanted part, while vascular anastomoses are developed at the reattached margins.

In his first report in 1971,[3] Mladick found that by leaving the replanted ear part buried for four weeks it became firmly embedded in the subcutaneous pocket and required sharp dissection for removal. No evidence of spontaneous epithelialization was present and the raw segment was covered with a split-thickness skin graft. The final result showed distortion and lack of definition of the contours. In the modified technique[4] Mladick left the replanted part buried for two weeks. He then removed only the lateral aspect from the pocket, returning a week later to remove the medial aspect.

The case reported above substantiates the more satisfactory results of this modification. It is felt that with utilization of this method more successful replantations of severed ear parts can be achieved.

Summary

The successful reattachment of a major ear amputation using the pocket principle is described, and proposed as a method for more widespread use.

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Special Articles

Consumer Attitudes Toward Medical Malpractice

Stephen W. Brown

Poor communication between the patient and physician is a major contributor to malpractice suits. Various authorities stress that good patient-physician rapport substantially lessens the probability of a professional liability suit. Despite these "truisms" little is known about consumer attitudes toward medical malpractice. Does this public feel that physicians are the cause of most malpractice suits? How likely are people to sue their doctor for malpractice in various situations? What is public reaction to various proposals for easing the malpractice insurance crisis? These are some of the major questions addressed in this article.

This article is the third in a five-part series on consumer and physician attitudes toward physicians, health care, and medical malpractice.[1]

Consumer attitudes toward various aspects of medical malpractice are the focus of this article. As indicated in the opening paragraph, little is known about the publics' attitude toward malpractice. Yet, the consumer is the one who ultimately pays for escalating malpractice insurance premiums, additional "precautionary tests," and other outgrowths of the malpractice problem. Furthermore, the consumer or patient is the party who initiates the malpractice suit based upon real or perceived dissatisfaction with the physician.

The information contained in this article comes from a consumer survey administered to a random sample of 997 adult residents of Arizona. The respondents to the survey came from metropolitan Phoenix (546), metropolitan Tucson(251), and from communities outside the two population centers (200). A sample of 997 adults is statistically reliable and offers a good base for making inferences about Arizona's adult population. The survey was conducted over the telephone by a professional interviewing firm. The Ad Hoc Malpractice Insurance Crisis Committee of ArMA sponsored the study.

Dr. Brown is a Professor in the College of Business Administration at Arizona State University. As an expert in consumer research and professional services, he also serves as a consultant to various businesses and associations.

Table 1
Opinions Toward Physician Wrongs in Malpractice Suits

Statement	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
In most malpractice suits, the doctor is **not** at fault.	9.9	22.0	42.8	18.1	7.2
In most malpractice suits, the doctor has been in the wrong.	6.3	10.5	43.5	25.0	14.7

Table 2
Consumers Opinions About Factors Related to Malpractice

Factors Causing Insurance to be High	Percent of Respondents Mentioning*
Doctors at fault	19.5
Lawyers at fault	13.7
Court/judicial systems at fault	16.6
Insurance companies at fault	2.8
Number & dollar amounts of suits being filed	44.2
Greediness of patients	32.8
Other	1.3
Reasons Why Patients Sue Doctors	**Percent of Respondents Mentioning***
Greedy people bringing unwarranted suits	50.7
Doctors making mistakes	45.3
Greedy lawyers encouraging suits	14.5
Publicity associated with big settlements	7.1
Juries/judges awarding big settlements	4.6
Inflation, cost of medical care, etc.	3.5
Other	5.0

**Columns sum to over 100 percent because of multiple responses to the questions.*

Attitudes Toward Malpractice

The information provided in Table 1 indicates consumer opinions towards the physicians' contribution to malpractice suits. Although the two statements are very similar, they were presented at different points in the survey. Respondents were read the statement at the left and then asked if they strongly agreed, somewhat agreed, were neutral, somewhat disagreed, or strongly disagreed with the statement.

The reaction to the two malpractice statements brought mixed results. The high number of neutral responses to both statements signifies uncertainty among consumers. In other words, they are unclear as to whether doctors are at fault or not in most malpractice suits. The results also suggest a certain sophistication among the public. Apparently, a sizeable number do not assume that a physician is in the wrong just because a malpractice suit has been initiated.

To provide greater insight on the two statements, they will now be looked at according to the various respondent characteristics. Whether a consumer has a family doctor or not appears to have no effect on their attitude toward malpractice. However, the number of years with a family physician does have an impact. People with the same doctor for over six years are more inclined to agree or strongly agree that doctors are *not* at fault in most malpractice suits. Perhaps having an opportunity to interact with the same physician over a

period of years leads to a more favorable impression of the medical fraternity in general. General agreement with the physician not being at fault in most malpractice suits ranges from a high among consumers having seen a surgeon (37 percent) to a low of those having visited a chiropractor and orthopedist (17.6 and 21.7, respectively). Chiropractor and osteopath patients voiced the most disagreement with the statement.

Among educational levels, some differences were noted among those with less than a high school eduction. Regarding the statement, "In most malpractice suits, the doctor has been in the wrong," 27 percent of this group agreed, compared to a maximum of 16 percent among other educational levels. Age does not appear to be a discriminator, except that the 65 and over group clearly voiced the most agreement(45 percent) with the statement "In most malpractice suits, the doctor is not at fault." Only slight differences were seen among the sexes, with the females less likely to agree (29 versus 35 percent) with the aforementioned statement. Results for the other demographic factors revealed no differences.

Factors Involved in Malpractice

The heavy publicity surrounding malpractice has resulted in four out of five consumers being familiar with the general nature of malpractice insurance. This finding coupled with results discussed earlier indicate that the public is more familiar with malpractice than members of the medical community might have thought.

Respondents were asked what they thought caused the cost of malpractice insurance to be so high. This question was asked in an open-ended manner, allowing participants to respond with any thoughts that came to mind. Parenthetically, those unfamiliar with malpractice insurance were told what the term means before answering this question. As illustrated in Table 2, virtually all comments could be categorized into one of six areas (the percent figures in the exhibit represent the proportion of people giving each reason). The average consumer offered one and a half reasons.

Again, the results indicate a knowledgeable consuming public. Close to half of the respondents associate high malpractice insurance costs with the publicity surrounding the number and dollar amounts of suits being filed. Patient greed was noted by a third of the participants, while only 20 percent attribute the high costs to doctors being at fault. The reaction to this question was consistent across educational levels with one exception. As education increased, people were much more inclined to attribute rising costs to lawyers. The three geographical areas provided differing responses to this same question. Respondents from metropolitan Phoenix not only offered more reasons, but also were more inclined to point the finger at lawyers and patient greed. Results from the other demographic factors showed no difference.

Following the question on malpractice insurance costs, the respondents were explicitly asked, "Why do you think patients sue doctors?" This was also an open-ended question and the "typical" participant offered one and a half reasons. For this question most of the responses could be categorized into six areas (the percent figures in Table 2 represent the

Table 3
Consumer Propensity to Sue in Hypothetical Situations

Likelihood of Suing if you Developed a Serious Medical Problem and Doctor Might be at Fault	Percent of Total
Very likely	11.9
Somewhat likely	18.4
Undecided	29.6
Somewhat unlikely	17.6
Very unlikely	22.6
Likelihood of Suing if Spouse or Parent Died and Doctor Might be at Fault	**Percent of Total**
Very likely	17.3
Somewhat likely	22.2
Undecided	29.6
Somewhat	13.8
Very unlikely	17.1

TABLE 4
The Likelihood of Suit in Event of Death of Spouse/Parent and Doctor Might be at Fault
Analyzed by Educational Level

	Likelihood of Suing				
Educational Level	Very Likely	Somewhat Likely	Undecided	Somewhat Unlikely	Very Unlikely
Less than High School	13.8	16.6	36.6	11.0	22.1
High School or Trade School Graduate	15.8	21.4	30.8	12.9	19.1
Some College or Post High School	19.3	23.4	24.8	17.2	15.3
College Graduate	18.3	28.2	29.8	12.2	11.5
Postgraduate work or Graduate Degree	21.7	20.6	26.8	14.4	15.5

Table 5
The Likelihood of Suit in Event of Major Medical Problem and Doctor Might be at Fault
Analyzed by Age

	Likelihood of Suing				
Age	Very Likely	Somewhat Likely	Undecided	Somewhat Unlikely	Very Unlikely
18-24	11.1	32.0	22.9	17.0	17.0
25-34	17.4	21.5	33.9	16.1	11.2
35-49	10.3	16.4	31.7	17.9	23.7
50-64	9.0	11.6	27.0	17.5	34.9
65+	10.2	11.6	28.6	19.7	29.9

proportion of people giving each reason). The results indicate that the public clearly perceives the patient and the doctor as being the key factors in decisions to bring a suit. Half the respondents mentioned patient greed as being the cause of suits and just under half noted the mistakes of doctors. Lawyer greed, the judicial system and other factors associated with malpractice suits were rarely mentioned. Thus, one can conclude that consumers perceive that malpractice suits primarily arise within the domain of the doctor-patient interface.

No differences were uncovered when looking at this question in conjunction with all but one of the classification questions (e.g., education, income, age). Geographical areas again produced some interesting differences. While patient greed and doctor mistakes were the most common responses across all three parts of the state, Phoenicians are more likely to cite greedy lawyers and the publicity of big settlements than their Tucson and non-metropolitan counterparts.

Propensity to Sue

Later in the survey, respondents were asked to put themselves into two hypothetical situations. They were first told "suppose that you developed a serious medical problem in which you believed your doctor might be at fault." Given this scenario, they were asked the likelihood that they would sue the doctor for malpractice. As revealed in Table 3, the results were mixed. The largest percentage of people were undecided. Nevertheless, over 10 percent said they "very likely" would sue and another 18 percent indicated they would be "somewhat likely" to initiate action.

The second hypothetical situation stated. . ."suppose that your spouse or parent died and you believed their doctor might be at fault." Here again the results were mixed (see Table 3). In this scenario, however, respondents expressed a stronger tendency to sue. Forty percent mentioned that it would be "very likely" or "somewhat likely" that they would sue the doctor. The results from the two hypothetical situations show that a substantial segment of the population would consider initiating proceedings against a physician if they felt they had been seriously wronged. Thus, the American "sue syndrome" is likely to continue into the 1980s.

In cross tabulating the findings from the hypothetical questions with various people characteristics a profile emerges. Individuals/families most likely to initiate a suit under the conditions presented in the scenarios have the following characteristics:

Frequent vists to doctors.
Better education.
Middle to upper income.
Live in a metropolitan area.
Range in age from 18-34.
Male.

In addition, the people are most likely to have been seeing the family physician for 3 to 6 years or for less than one year. The "sue inclined" individual/family is most likely to have seen a pediatrician during the past twelve months. This tendency correlates with the 18-34 age profile and also suggests an inclination toward families with children at home.

Presenting all of the data pertaining to this profile would be overwhelming. Nevertheless, the definite education and age tendencies are worthy of more attention. Table 4 shows the likelihood of suing in the event of spouse/parent death as it relates to educational level. People with some exposure to college are more likely to sue than those with no college background. The age factor was clearly demonstrated in the results to both scenarios. Table 5 illustrates the likelihood of suing if a "serious medical problem" arose as it related to age. The table indicates the greater likelihood of suing among those under 35 years of age.

Malpractice Experiences

Table 6 probes into the area of actual malpractice experiences. Eight of the nearly 1,000 survey participants had actually brought a malpractice suit. An additional 13 had gone as far as consulting a lawyer, while 55 said that they had seriously considered bringing suit. The second set of data in the exhibit only looks at the 76 aforementioned individuals. Among this sub-sample, personal and doctor influences accounted for the bulk of the reasons for bringing suit or considering bringing suit.

Unfortunately these 76 people cannot be categorized. They run the gamut in terms of age, education, income, geographical area, and sex. The only noteworthy discriminator shows a disproportionate number of people having seen an osteopath either having discussed a suit with an attorney (4.5 percent) or seriously considered bringing suit (10.1 percent).

Table 6
Actual Consumer Malpractice Experiences

Respondents or Family Members Malpractice Experiences	Percent of Total
Actually brought suit	0.8
Consulted lawyer about bringing suit	1.3
Seriously considered bringing suit	5.5
None	92.4
Reasons for Bringing/Considered Bringing Suit (76 Responding)	**Percent of Total**
Personal influences	52.1
Family influences	14.1
Doctor influences	32.4
Influences of other medical personnel	7.0
Lawyer influences	4.2

Proposals to Ease the Problem

Various proposals have been offered for easing the malpractice insurance problem. As Table 7 illustrates, participants were presented with five of these proposals and then asked to denote whether they were strongly for, somewhat for, neutral, somewhat against, or strongly against each proposal. A clear concensus of support exists for statements b, d, and e. The overwhelming advocacy for "b" ties in with findings presented in previous months' articles. Greater time spent by the doctor with the patient is supportive of earlier results calling for better physician explanation of medical problems to patients. Obviously, greater time does not automatically mean better explanation, but a correlation does exist between the two. A majority of the repondents also supported statement "c." The only proposal drawing mixed reaction was "a." Differences of opinion (including substantial neutral reactions) exists on whether a $500.000 lid should be placed on malpractice claims. Just over 42 percent support the proposal, while around 30 percent expressed opposition and 30 percent were neutral. Support for the proposal increases as household income rises with one exception. Respondents making $45,000 or more were the most outspoken against the suggestion.

Conclusion

This article is the third of a series of five in consecutive months in *Arizona Medicine*. All five articles feature the results from a major study sponsored by the Ad Hoc Malpractice Insurance Crisis Committee of ArMA. The study focused on consumer and physician services, medical malpractice, and patients. The catalysts for conducting the study was the belief that patient-physician communication

and understanding are fundamental to the malpractice problem.

Next month's article focuses on the responses to the physician survey. The sample of physicians was asked many of the same questions posed to consumers. The April article in this series will offer a comparative analysis of the findings from both the consumer and physician surveys.

Reference

1. The five articles are derived from the report "Consumer and Physician Attitudes Toward Physician Services, Medical Malpractice , and patients." The report was submitted by this author to the Ad Hoc Malpractice Insurnace Crisis Committee of ArMA in August 1979.

Table 7

Consumers Opinions on Proposals to Ease the Malpractice Problem

Proposal	Strongly For	Somewhat For	Neutral	Somewhat Against	Strongly Against
a. A law stating that the maximum amount of money that could be received by patients with malpractice claims is $500,000	20.8	21.3	28.9	13.8	15.3
b. Greater time spent by your doctor in explaining the potential problems of your medicine or operation.	63.4	18.4	11.8	4.3	2.2
c. A law requiring that all disputes between parties and doctors be submitted to a panel of expert doctors and lawyers for arbitration.	48.1	17.7	17.5	6.6	10.1
d. A law limiting the percentage of the settlement that lawyers could receive.	69.0	10.6	11.1	3.9	5.3
e. A law requiring that a a malpractice claim be reviewed by a panel of expert doctors and lawyers before going to court.	63.3	14.6	12.1	3.9	6.2

Pharmacology In Arizona

Thomas F. Burks, Ph.D.

Pharmacology and toxicology are different, but allied, scientific disciplines concerned with interactions between chemicals and biological systems. Because I am not a toxicologist, I have never had to justify to the person in the next seat on an airplane the difference between toxicology and the avocation of Lucrezia Borgia. Before I learned to describe my own occupation simply as "school teacher," however, I frequently whiled away the miles of Kansas or Texas explaining that pharmacology has nothing directly to do with agriculture. In this article, I will discuss the activites of some Arizona school teachers and researchers who are pharmacologists, toxicologists, physicians, or pharmacists, or some mixture of up to three of those things. If I do not make the distinctions adequately clear, perhaps we will have the opportunity to talk about more specific definitions sometime on the way to Dallas or Chicago.

As implied by the name, pharmacology research interest has traditionally focused upon drugs, their effects and mechanisms of action. Pharmacologists, including those in academic centers, have thus contributed to the development of new therapeutic modalities and to a better understanding of existing agents. More recently, pharmacologists have recognized that the effect of the body on a drug is often an important determinant of the effect of the drug on the body. This concept has given rise to specialized research in pharmacokinetics. Put simply, pharmacokinetics deals with how drugs reach their site of action; pharmacodynamics deals with what they do after they get there. Explorations of mechanisms of drug action often require research into the physiological or biochemical system affected by the drug. This can sometimes lead the researcher into studies of fundamental biological processes of little obvious or immediate relevance to actions of a particular drug, but which may ultimately be of great potential relevance to the understanding of the actions of many drugs or which can lead to development of new drugs. As an example, pharmacologists invested considerable effort in studies of prostaglandins, which finally paid off in explaining the actions of aspirin, leading in turn to the development of other prostaglandin synthesis inhibitors with anti-inflammatory activity. Endogenous chemicals can also be considered as drugs: neurotransmitter substances (norepinephrine, dopamine), hormones (insulin, gastrin), intracellular organic cations (polyamines), amino acids (taurine), autoacoids (histamine, prostaglandins), and neuropeptides (substance P, endorphins). Studies of the biological effect of these substances and their control mechanisms are valid concerns of

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pharmacologists.

Several hundred years ago, it was recognized that the main difference between a drug and a poison is the dose. Toxicologists in the past were involved mainly in studies of effects of high (toxic) dosages of therapeutic agents or the effects of natural or synthetic poisons. More recently, toxicologists have become increasingly engaged in the safety evaluation of drugs and chemicals from the medical, industrial, consumer, and environmental points of view. Toxicology properly includes the pharmacological aspects of chemical actions, but extends also to evaluations of hazard and development of technologic methodologies for minimizing chemical hazards.

At the University of Arizona, the pharmacological sciences (pharmacology and toxicology) are presently organized in various components of the Health Sciences Center. The Department of Pharmaocology in the College of Medicine provides the core of basic pharmacology research, education, and service for the College. The Department provides a focal point for the professional activities of the clinical pharmacologists, who have joint academic appointments in Internal Medicine, Pediatrics, or Anesthesiology, and, in addition to teaching and research, have patient care responsibilities. The Department of Pharmacology and Toxicology in the College of Pharmacy provides expertise in pharmacology for the Colleges of Pharmacy and Nursing and directs the Arizona Poison and Drug Information Center. Recently, the University of Arizona Program in Toxicology, previously a free-standing interdisciplinary program of the University, was incorporated into the College of Pharmacy, primarily for reasons of administrative convenience and to gain much-needed space. The Program will continue to rely heavily upon interdepartmental relationships for its instructional and research activities. The interdisciplinary program in Addiction Studies is an operational unit of the School of Health Related Professions, one of the components of the University of Arizona Health Sciences Center. The Addiction Studies Program has strong ties with pharmacologists and toxicologists in the Colleges of Medicine and Pharmacy.

As this article addresses pharmacology *in* Arizona, not only pharmacology *at* Arizona, I must mention developments in pharmacology at the Barrow Neurological Institute in Phoenix. The BNI has recently undertaken a major commitment to basic research in the neurosciences. As part of that research effort, a laboratory in basic neuropharmacology will soon be established. A staff neuropharmacologist has been recruited and will join the BNI in 1980. This staff member will have an appointment in the Department of Pharmacology, UA College of Medicine, as a member of the graduate faculty.

The departments in the Colleges of Medicine and Pharmacy have developed a unified Ph.D. training program and collaborate extensively in research but have different instructional missions. The Department of Pharmacology and Toxicology of the College of Pharmacy is responsible for undergraduate instruction in pharmacology and toxicology to students of pharmacy and nursing. The Department of Pharmacology in the College of Medicine is responsible for instruction of undergraduate medical students and is active in continuing medical education for house staff and practicing physicians in Arizona. In addition, the Program in Toxicology offers a course of graduate studies in toxicology leading to the M.S. degree. The Addiction Studies Program also offers a course of graduate studies leading to the M.S. degree. The departments in the College of Pharmacy and the College of Medicine jointly offer a graduate program leading to the Ph.D. degree in pharmacology. Students in this program may select major tracks. in pharmacology or toxicology. Graduate training in pharmacology is often attractive to physicians, pharmacists, and other health professionals who aspire to careers in academic medicine or research. The College of Pharmacy and the College of Medicine cooperate in management of the Arizona Poison Drug Information Center, an important service and health care resource which is located in the Health Sciences Center.

I am proud to state that pharmacological research is thriving in Arizona. While space limitations have constrained expansion of research in some areas, pharmacology and toxicology faculty members have competed with unusual success for extramural (mostly U.S. Public Health Service) research funding, which supports most of the ongoing research. At this particular time, our largest single collective research endeavor is probably in the area of neuropharmacology. Faculty members from the College of Medicine, College of Pharmacy, Barrow Neurological Institute, and Addiction Studies Program participate in studies of the biochemical, pharmacological and electrophysiological aspects of neurological diseases such as Parkinsonism, Huntington's disease, and epilepsy. Mental disorders such as schizophrenia, anxiety, and depression, are also the subjects of intense multidisciplinary research. Drug abuse and drug addiction are major state and national problems. Mechanisms of narcotic drug acute actions, tolerance, and dependence are presently under investigation. The pharmacological actions of marijuana, psilocybin, phencyclidine and similar agents are also being investigated in animal studies. To expand our program in studies of psychoactive drugs further, attempts are being made to establish a basic pharmacology research program concerning alcoholism at the Tucson VA Medical Center. Studies of alcoholism will represent an example of how basic research scientists, clinicians, and social scientists can work together toward the solution of a major medical and social problem. We are presently in an excellent position to conduct a multifaceted research investigation into the pharmacology of alcohol, mechanisms of alcohol actions, and the biochemical and behavioral changes associated with chronic alcoholism. An effective alcoholism research program is a major goal of our future research development.

Other basic and clinical faculty members conduct mechanistic and applied research into specific aspects of molecular and biochemical pharmacology and toxicology, with potential applications to diverse health problems, from better management of neoplastic disorders to improved safety in the use of agricultural pesticides. Several basic and clinical faculty members are interested in pharmacological problems associated with aging. This type of research is of special relevance to citizens of Arizona, but also will have a beneficial impact upon the health care of people everywhere. Faculty members in Pharmacology, Pediatrics and Internal Medicine are working independently and in collaboration to provide better understanding of the etiology and management of various cardiovascular diseases. For example, little is known about the cerebral circulation in neonates, the specific details of the circulatory problems that develop frequently in premature infants, or the best techniques for medical managment of these problems. An interdisciplinary research team is investigating the physiology and pharmacology of the cerebral circulation in neonates.

Pharmacology in Arizona is also concerned with teaching; the teaching draws heavily upon basic knowledge gained in the laboratory and at the bedside. For example, contemporary emphasis on mechanisms of the biological actions of chemicals has had a dramatic impact upon instruction. Students of modern pharmacology and toxicology are exposed systematically to mechanisms of drug action, which can allow more accurate prediction of patient responses to individual drugs or combinations of drugs. This may not at first sound especially thrilling, but, in my opinion, is

far superior to memorizing long lists of drug names, their intended effects and side effects. In some cases, it has become possible to describe drug actions almost totally in terms of mechanism. For example, once a student understands autonomic pharmacology, it is necessary only to state that a particular drug is a beta$_2$ adrenergic receptor agonist for the student to understand completely the pharmacological effects to be expected from the drug. It is our hope that continued research will ultimately allow this degree of understanding of all drug actions. When that day comes, life will be considerably simpler for pharmacologists, students, and physicians.

A major question which should be addressed by pharmacologists and educators is whether formal instruction in pharmacology should be limited to students in the health professions. In my admittedly biased view, knowledge about how aspirin reduces fever, or how foreign chemicals are metabolized in the liver, or the selective toxicity of pesticides, or the actions of psychedelic drugs to alter perception is easily as important to modern citizens as how frogs reproduce or who was King of England in 1776. I believe the time has come to give serious consideration to the establishment of courses in pharmacology and toxicology, taught by trained professionals, in all four year institutions of higher education. Such courses could help create informed consumers better able to make rational decisions concerning drug use or, at least, better able to follow physician and pharmacist instructions for proper drug therapy.

It is our intention to continue development of pharmacology in Arizona. This will be accomplished by extending our research activities, by offering quality educational programs in the pharmacological sciences, and by participation in University outreach programs. If you and I happen to sit together soon, perhaps we will have time, between the Sprite and the cold chicken, to chat in more detail about my favorite subject, pharmacology.

Delegate's Report

1979 Interim Meeting of the AMA House of Delegates

This report is made on behalf of the Arizona Delegation:
W. Scott Chisholm, Jr., M.D. - Delegate to AMA
Bruce N. Curtis, M.D. - Alternate Delegate to AMA
Arthur V. Dudley, Jr., M.D. - Delegate to AMA
William R. Myers, M.D. - Alternate Delegate to AMA
Edward Sattenspiel, M.D., - Delegate to AMA
William C. Scott, M.D. - Alternate Delegate to AMA

These are the key actions of the 1979 interim meeting of the AMA House of Delegates, which concluded in Honolulu on December 5.

Despite the distance to Hawaii for some delegates, this interim meeting was well attended with 272 of the 277 delegates participating in the deliberations.

The House considered 74 reports and 98 resolutions on a variety of issues of concern to the practicing physician.

In addition to the many items of business requiring our consideration, we heard our president, Dr. Hoyt D. Gardner of Louisville, call for a new determination to restore public confidence in all professions. Dr. Gardner pointed out that each physician must continue to earn the public's trust with each patient encounter. He also called for more medical family involvement in the family life and health of America, and for voluntary local initiatives by organized medicine for the public good.

Major actions of the House at the meeting included:

— A reaffirmation of the Association's policy on national health insurance.

— An initial review of a comprehensive report from the council on Medical Education.

— A new position calling for revision of the Delaney Clause of the FDA law.

— The receipt of several reports pointing out the necessity for increased membership recruitment activities.

— A statement opposing the use of the phrase "reasonable charge" by Medicare when use of the phrase misleads patients.

National Health Insurance

Usually in the forefront of controversial issues before the House, national health insurance generated little debate at this meeting. The House is clearly satisfied with the Association's NHI policy and swiftly reaffirmed the 1978 principles on national health insurance and commended the Board of Trustees.

The House adopted a Board report that called for a continuation of current initiatives of the AMA so as to ensure that the NHI principles can be forcefully articulated and fully considered in any dialogue that takes place in congress.

Briefly stated, the AMA's policy is to maintain the high quality of medical care within the framework of private health insurance.

Medical Education

The House received a 74-page background report entitled "Future Directions for Medical Education" which proposed sweeping changes in medical education. The delegates *filed* this report and directed that its suggestions become an "agenda of issues for discussion, followed by the development and review of more specific recommendations."

This comprehensive report addresses issues ranging from admission to medical school and residency training to licensure and evaluation of physicians. It states a need for the restructuring of the third and fourth years of medical school, creation of a "comprehensive residency" for all first-year residents, and establishment of a committee of "public and professional statesmen" to make policy recommendations to the council on medical education.

Limited quantities of this report are available from the AMA headquarters in Chicago, we're sure that the House will be acting on more specific recommendations affecting medical education at future meetings and would solicit your views on this vital topic so important to all of us.

Delaney Clause Revision

The House adopted an important report from the AMA Council on Scientific Affairs calling for a revision of the Delaney Clause so that:

1. Risk/benefit assessments were made a part of the decision making process.
2. Alternative risks would be weighed before requiring the banning of substance suspected of being hazardous.
3. Decision-making on food additives should be based upon the best scientific evidence available pertaining to the usefulness, function, uniqueness, health needs, and potential risk of the substance.

Membership

Few issues are more frustrating to AMA delegates and others active in the national association than the continuing problem of recruiting and retaining AMA members. We are aware of the important accomplishments of the AMA in behalf of the profession. We are also aware of its shortcomings, but there is no question in our minds that the AMA is worthy of our membership and active support.

The bad news is that the percentage of AMA members against the U. S. Physician population continues to decline. The good news is that total dues-paying members have shown a modest increase and the medical students and resident physicians now total over 20,000 members in each category.

One report informed us that 42% of the state societies and 63% of the county medical societies have no membership recruitment activities for new members. These disturbing facts prompted AMA's Executive Vice President, D. James H. Sammons, to urge the members of the House to ask their local societies to re-examine their membership activities. The reference committee that considers AMA

financial affairs reported that in the absence of substantial numbers of new members, association expenses will exceed income in 1981.

The high rate of inflation means that the AMA must add several thousand members each year just to maintain the same level of activity.

The council on Long Range Planning and Development is studying various models for restructuring the federation in an effort to resolve the long-term membership problem. We will be considering these proposals at future meetings.

In the meantime each of us should become active membership recruiters.

Medicare "Reasonable Charges"

In acting on a resolution submitted by the Oregon delegation, the House condemned the use of the phrase "reasonable charges" when use of the phrase misleads patients and the public.

The Oregon delegates were objecting to the use of the phrase in a publication called *Guide to Health Insurance for People with Medicare"* published by the National Associaton of Insurance Commissioners and the Department of HEW. The resolution explained that there is a strong inference that a physician who does not accept Medicare's "Reasonable Charge" as a full payment is, therefore, making "unreasonable charges."

The AMA will investigate this publication and submit a report to the House at the next meeting.

We cite the action of this resolution as an excellent example of how practicing physicians can influence AMA policy. The House of Delegates is a democratic organization and we act on business that concerns all of us in our individual practices.

We debated and voted on a wide variety of issues, including:

— Gun Control Legislation
— Health Care for Refugees
— Strip Searching
— Brain Death Legislation
— Treatment of Chronic Mental Patients
— Foreign Medical Graduates.

and many more issues — too many to discuss in this brief report.

If more physicians, like yourselves, would come and participate in the House debates, we know that you would be impressed with the vitality of your AMA. Any member of the Association may testify before reference committees and you can certainly bring your views to your delegates representing you on the floor of the House.

Please let us, as members of your delegation, know your views on the issues that affect your practice.

State of the Art

Advances in Peritoneal Dialysis Technology:

Continuous Ambulatory Peritoneal Dialysis

Irvin M. Cohen, M.D.

Editor:
Eric H. Prosnitz, M.D.

Many attempts are currently being made to find an alternative to intermittent hemodialysis treatments, which are time consuming for the patient and expensive for society. For instance, portable wearable artificial kidney systems are being studied in which hemodialysis can be carried out for many hours by continuous regeneration of dialysate. Considering the complexity of some of these devices, it is surprising that the concept of portable dialysis may already now be realized with the advent of a simple technique called continuous ambulatory peritoneal dialysis (CAPD).[1]

CAPD is easy to learn, can be done by the patient alone without an assistant, and requires no machinery or special equipment. To initiate the procedure, a plastic bag containing 2 liters of peritoneal dialysate is connected to IV tubing which is attached to a permanent indwelling peritoneal catheter (Tenchoff catheter).

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After the fluid is drained into the peritoneum by gravity, the bag is rolled up still attached to the tubing and stuck in a belt, pocket, or pouch. The fluid dwells in the peritoneum for between 4 and 8 hours allowing ample time for equilibration with plasma. The dialysate is changed 4 or 5 times a day, for example, upon awakening, at noon, at dinner time, and at bed time. To perform the exchange the plastic bag is placed on the floor, the tubing unclamped, and the fluid allowed to drain out. Then the tubing is disconnected from the used bag and attached to a fresh bag of dialysate for reinfusion. This disconnection and reconnection is the critical step of the procedure because at this time the system is exposed and bacterial contamination can occur. Dialysis is done 7 days a week so that the abdomen is always filled with dialysate. Each fluid exchange takes about one half hour to perform.

CAPD was developed by Drs. Moncrief, and Popovich of Austin, Texas to meet the needs of a particular patient.[1] Since being shown to be effective, it has been applied to increasing numbers of patients, especially in Ontario where it is now the most popular form of home dialysis. However, because CAPD has been in use for only 3 years, its long term advantages and disadvantages are not yet known. CAPD is efficacious because the prolonged dwell times allow dialysate urea to reach equilibrium with plasma.[2] Thus, if five 2-liter exchanges are done and if an average of 2 liters of ultrafilterable fluid from the patient's dietary intake are also removed, the clearance of urea is 12L per day, or 8.3 cc/min. This is sufficient clearance to maintain the BUN at 60-70 mg/dL in most patients; and furthermore, fluctuations in serum chemistries do not occur because the dialysis is continuous. In fact, most patients do just as well with 4 exchanges per day, and some with as few as 3 per day. The prolonged dwell times also enhance the clearance compared to hemodialysis of substances in the middle molecule range (up to 5000 daltons), substances which may contribute to the morbidity of uremia.

CAPD has proved to have other advantages as well. Sodium and water balance can be easily maintained by adjusting the tonicity of the dialysate. Using 2 exchanges each of 1.5% 4.25% dextrose solutions daily will result in drainage of over 2L additional fluid per day so that dietary fluid intake can be unrestricted. However, because the 4.25% solution is so effective, some patients develop signs of intravascular volume depletion and fatigue and will voluntarily restrict their fluid intake so that they can use only the 1.5% dextrose solution. Potassium is so well cleared by CAPD that many patients must switch to a high potassium diet or add potassium supplements. Because 6-8 grams protein is lost in the dialysate each day, a high protein diet is mandatory to prevent inanition. Phosphate binders, long the bane of hemodialysis patients, can often be eliminated entirely.

Hypertension is more easily controlled with CAPD. Many patients whose hypertension was difficult to control on hemodialysis even with multiple medications become normotensive without the use of antihypertensive drugs. Clearing of pulmonary vascular congestion and reduction in heart size can also result. Other beneficial effects that have been reported are an increase in hematocrit, positive calcium balance, fall in serum parathormone levels, increased sense of well being, and absence of dialysis dysequilibrium symptoms. By adding insulin to the dialysate, continuous control of blood sugar can be achieved in diabetics.

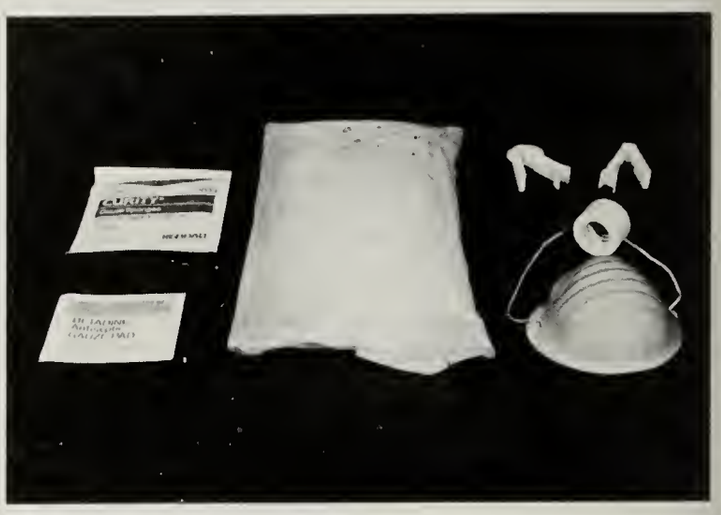


Figure 1
All the supplies needed to do one CAPD exchange.

The major complication of CAPD is peritonitis. These infections have been blamed on poor technique by the patient or problems with faulty catheters and connectors. With the use of plastic bags and the recent marketing of improved connecting devices, it is hoped that peritonitis will become less of a problem. At present, major centers report an incidence of peritonitis once every 7-9 patient months.[3] Many of these episodes can be treated without hospitalization by training the subject to add antibiotics to the dialysate.

Other problems with CAPD include persistent hypotension, which was noted by Oreopoulous in 31 of 66 patients in Toronto.[4] Many of these patients also complained of postural dizzyness or fatigue. Worsening of hemmorhoids and rectal prolapse can occur, presumably because of the constantly elevated intraabdominal pressure. Hypertriglyceridemia also has developed in CAPD patients but its long term significance is not know; and attempts are being made to eliminate this problem by substituting amino acids for glucose as the osmotic agent in dialysate.

Here in Tucson, we have recently implemented a CAPD training program, which is a natural extension of the intermittent peritoneal dialysis (IPD) program which we have had for the past 2 years. IPD is much like hemodialysis in that treatments are needed 3 times weekly, but for 10-12 hours each. In IPD, dialysate is exchanged by an automatic cycling machine to give 2 or more 2L exchanges each hour. IPD can be done at home without an assistant and is easier to learn than

hemodialysis. The incidence of peritonitis is about one per patient year. Peritoneal dialysis is preferred over hemodialysis in infants, in the elderly, in diabetics, in patients with cardiovascular instability, in those who have run out of vascular access sites, and in those who desire dialysis in the home but have no assistant.

However, a recent report from the Northwest Kidney Center in Seattle, where home IPD was developed and touted, indicated a high long-term patient drop out rate.[5] These gloomy results forced this group to conclude that IPD is not as satisfactory as chronic hemodialysis.

Our experience with IPD mirrors that of the larger centers. Since early 1978 we have trained 11 patients, whose average age was 59. One dropped out after training and never dialyzed at home. Two discontinued IPD after 3 and 7 months because of poor clearances. Two others were placed back on in-center hemodialysis because of poor compliance, and another switched to CAPD. Four patients died after 2, 15, 15, and 24 months on IPD. The last one remains on IPD at 18 months. There have been 10 episodes of peritonitis in 98 treatment months and 20 Tenchoff catheters have been placed in these 11 patients. One patient required 7 catheters and had three peritoneal infections.

Though these results may sound unimpressive, we rate the IPD program a success because it has kept a number of people alive with an acceptable life style who otherwise would not have been able to do well. For instance, two were elderly Mexican females who did not have dialysis or transplantation available to them. Two were men who had severe cardiovascular disturbances and could no longer be hemodialyzed. For several, the opportunity to live at their homes, distant from any treatment center, made the effort worthwhile despite a multitude of complications. Of these 11 patients, only 2 would normally have been deemed acceptable as home hemodialysis candidates.

Thus, the advent of CAPD came at a convenient time; and we have, to date, trained seven people. The patients are first hospitalized for insertion of the Tenchoff catheter in the operating room. For the following three days, they receive continuous peritoneal dialysis with hourly exchanges of one liter in order to maintain catheter patency and insure proper catheter function. For another four days, dialysis is performed daily for 10 hours, with heparinized solution left in the peritoneum overnight. To avoid the problem of leakage around the catheter, the dialysate volume is kept below 2L for at least the first week. Then the patient can be discharged and training, which normally takes 10 to 12 days, can continue as an outpatient. So far all our patients have been happy with CAPD; and there has been one episode of peritonitis in 12 treatment months.

In contrast to IPD, we have attempted to exclude high risk patients and those likely to be poor compliers. Compliance will undoubtedly prove to be the most important factor in patient success in the long run. The patient must be meticulous about technique and must be willing to adhere to directions if he is to continue to successfully perform 28 exchanges week after week. Therefore, it is estimated that CAPD will be useful in only 10-20 percent of people with chronic renal failure. Still, the advantages of portable dialysis without the need for thrice weekly treatments in a dialysis unit are proving enticing to more and more people with end stage renal disease.

Table 1
Continuous Ambulatory Peritoneal Dialysis (CAPD)

Advantages	Disadvantages
1. Rehabilitation potential	1. Peritonitis
2. Exchanges can be done in home, car, work, vacation, etc.	2. Protein loss 6-8 gms/day
3. No assistant needed	3. Hypertriglyceridemia
4. Short training time	4. Hypotension & fatigue may occur
5. No machinery or anticoagulation	5. Hemmorrhoids & rectal prolapse
6. Lack of feeling of fluid in abdomen	6. Hypokalemia
7. Steady state of blood chemistries	7. Requires meticulous compliance
8. Minimal dietary restrictions	8. Must be done 3-5 times daily
9. Minimal cardio-vascular stress	
10. Better middle molecule clearance	
11. HBP easily controlled	
12. No dialysis dysequilibrium	
13. Improved hematocrit	
14. Reduced cost	

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CME Services: Update

The editorial in July, 1978, described the spectrum of continuing medical education offered at the College of Medicine, University of Arizona. Since that time, the Office has continued to improve its services to achieve the goal of meeting the needs of the physicians in Arizona. These services include the formal conferences, the Outreach program, involvement in software packages, medical audits, the Clinical Seminar Series, and individual self-assessment programs.

Conferences range in focus from an overview of the current state of the art to the highly specialized. These conferences offer the physician AMA Category I credit and, when applicable, accreditation from other specialty societies. Times and locations of these conferences are varied to make them accessible to as many physicians as possible. An integral part of every program is the construction of an evaluation component. The design of the research instrument is modified according to the specific subject matter but the major thrust is to measure whether the objectives of the conference have been met. Future conferences are then adjusted with regard to subject matter, delivery, and other aspects necessary to present an educationally sound program.

Records of credits earned by all participants are maintained in the Office of Continuing Medical Education in conjunction with the University of Arizona Health Sciences Center computer center. This is a cumulative record and at any time a physician may request a printout of his/her record of credits.

The Outreach Program is a joint effort with the American College of Physicians of Arizona. In this activity the Office works closely with Arie C. van Ravenswaay, M.D., Director of Continuing Education for the American College of Physicians in this state. For the past two years a letter describing the program has been mailed to county medical society presidents, secretaries and hospital administrators in those communities outside of metropolitan Phoenix and Tucson. In essence, participating physicians from the College of Medicine and the American College of Physicians are available to speak with medical personnel around the state. The programs receive AMA and AAFP credit. Some of the communities who have had programs are Yuma, Nogales, San Manuel, Whiteriver, Precott, Douglas, Ajo, Keams Canyon and Winslow. In response to the recent letter several new communities have contacted the Office to arrange for Outreach programs.

The College of Medicine Clinical Seminar Series was first begun in the fall of 1978. This program is held in Phoenix on eight Saturdays, September through April. The emphasis is on blending recent advances in the basic sciences with clinical topics of interest to physicians.

Coordination of software packages is another large portion of CME. These packages are constructed with critical medical analysis of subject matter. They are then field-tested and the report includes documentation and summary of methodology used and results obtained. Examination of results concerns content analysis, item analysis and comparative statistical testing. The project, in its entirety, is then reviewed for CME credit.

Medical auditing of offices, group health organizations and hospitals is carried out through the Office of CME. The audits involve medical assessment of charts by a panel of physicians and also include analysis of efficiency operations, interactive networks, and patient input.

Individualized medical education programs are made available through the Office. The Physician's Desert Retreat is one example. The project offers very specialized educational training and includes availability of legal consultation, physical examination and professional counseling services. The Mini-Residency Program is another example of an individualized educational package with a specific focus on clinical training.

The Office of Continuing Medical Education is pleased to provide these services for physicians and looks forward to continued growth and development. It is housed in the Moore House across the street from the College of Medicine wing of the Arizona Health Sciences Center. The Office looks forward to continued assistance to the physicians of Arizona.

Anthony F. Vuturo, M.D.
Outgoing Director,
Office of Continuing Medical Education
Christine Haska, M.A.
Instruction Research Specialist
Louis J. Kettle, M.D.
Dean, College of Medicine.

Auxiliary Highlights

Pima County—Women Aware

Women Aware, Pima County Medical Society Auxiliary's fifth annual program exploring concerns of women, will be held from 9 A.M. to 3 P.M. Tuesday, March 4, at the University of Arizona Student Union.

This year the emphasis will be on medical concerns and the Pima County Medical Society is joining in sponsoring and funding the program. Registration is open to women in the community. The $8.00 fee includes luncheon.

Dr. Lendon Smith, the practicing pediatrician from Portland, Oregon, who has become nationally known as a medical commentator for NBC television, will be the featured speaker, His topic is "Parent Abuse."

Registrants will be able to attend four other presentations, choosing from a wide variety of topics. Dr. Charles Kerr will speak on "Sexuality—How to Keep Your Husband at Home", Dr. Edward Byrne-Quinn on "How to Save Your Spouse from a Heart Attack", and Dr. Alan Levenson on "Depression—Disease of the Day."

Dr. David Alberts will give an "Update on Cancer." Drs. George Comerci and Elizabeth Racy will discuss "Surviving Adolescence." Dr. Edward Rogoff will speak on "Breast Cancer—Is there an Alternative to Mastectomy?"

Nutrition in early childhood and adolescence will be the subject of Dr. Richard Martin. Drs. Boyd Burkhardt, William Casey and Philip Fleishman will be the panel for "Cosmetic Surgery." Dr. Peter Lynch will speak on skin cancer and the danger of the Arizona sun.

Dr. Burnell Brown will present an update on "Management of Pain." Dr. Mort Aronoff will speak on "Breast Reconstruction After Mastectomy." Drs. Hugh Thompson and Charles Kerr will discuss "Women and Fitness."

Carol Hollander is chairman of the 1980 Women Aware Committee. Working with her are Joan Roth, Betty Mirabile, Carol Robertson, Ruth Byrne-Quinn, Carolyn Corrigan, Ann Justice, Mary Murphy, Jane Fleishman, Connie Wry and Pat Adler.

Court Battle

Teams of Pima County physicians and lawyers will battle on the basketball court April 13 in a benefit game sponsored by the Medical Auxiliary and the Bar Auxiliary. Proceeds will go to Mobile Meals.

The Legal Briefs (the lawyers) triumphed over the Super Shots (the doctors) in last year's game. The determined medics have been practicing hard under the direction of captains Kim Hewson and Barry Gershweir and should put up a stiff battle.

Marilyn Haas heads the Benefit Committee and Barb Evers serves as her co-chairman. Both auxiliaries will support their teams with cheerleaders, and pompon girls. Auxiliary and Society members will staff the concessions, selling sandwiches and soft drinks to the crowds on hand for "the biggest game in town."

Emphasis on Education

President Connie Wry reports that Pima Auxiliary continues to put a major emphasis on health education projects for the community. Twenty-two Auxilians act in the nutrition puppet plays presented weekly at elementary schools. "You Can't Fool Mother Nature" is seen by some 7000 Tucson school children each year. The script is constantly revised and updated. Susan Cummins heads the committee.

Auxiliary members joined doctors in staffing a PCMS booth at a Park Mall Health Fair in January. Theme of the booth was PCMS' 75 years of service to the community. Doctors and spouses were on hand to answer questions about medical care, available medical services, costs of health care, and organized medicine's positions on socio-economic health issues.

Mrs. John T. Clymer, President
ArMA Auxiliary

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ArMA Reports

The minutes appearing in this section have been edited to conserve space. A complete copy of the minutes of any meeting will be mailed to any member requesting them.

Medical Economics Committee

Meeting of the Medical Economics Committee of the Arizona Medical Association held November 20, 1979, at 810 West Bethany Home Road, Phoenix, convened at 6:45 p.m., Clyde W. Kurtz, M.D., Chairman presiding.

Welcome to New Members

Clyde W. Kurtz, M.D., Chairman, welcomed Theodore L. Mobley, M.D. as a new member to the Committee. Also welcomed were the new student members, Donald Buckley, Andrew Epstein, and Sheldon Marks.

Review of ArMA Activities Concerning ICA Hearing

Dr. Kurtz reviewed ArMA's activities concerning the ICA hearings relative to a new medical fee schedule held May 24, 1979. The ICA adopted the following medical fee schedule which reflected a general increase of 7.9% during its meeting held June 27, 1979.

	Present Since 9/1/77	New Effective 9/1/79	ArMA Proposal
Medicine	11.50	12.40	15.00
Surgery	9.25	10.50	13.50
Laboratory	7.25	7.80	8.50
Anesthesiology	12.50	13.45	16.00
Radiology			
Total Services	8.25	9.00	9.25
P.C. Only	2.00	2.15	2.50

Dr. Kurtz also reported on the Industrial Commission meeting held October 18, 1979 during which discussions were held on the advisability of updating the relative value study currently used as a fee schedule, quality and availability of care to the industrial injured patient as well as the current fee schedule. It is anticipated that future meetings will take place.

Reorganization

The Chairman reviewed the Board of Directors action that there be an economic organization for Arizona physicians and that such an organization be part of the Arizona Medical Association for the purpose of negotiating contracts, carrying out insurance grievances for its members and monitor third parties; and that this economic organization be under the umbrella of the Medical Economics Committee. It was suggested that the Committee reorganize itself into four possible sections responsible for doing the groundwork in their respective areas, reporting to the Committee for recommendation to the Board of Directors. The four sections include: 1) Section on Negotiations; 2) Section on Third Party Insurance Carriers; 3) Section on Member Benefits; 4) Section on Welfare and Charitable Activities by Physicians. Reorganization of the Medical Economics Committee into four sections as noted above was tabled.

Correspondence

AMA "Seminars on Knowledge and Skill Development in Negotiations"

The Chairman received an announcement of the "Seminars on Knowledge and Skill Development in Negotiations" and a request for names of Committee members who may be interested in attending the next session to be held in Phoenix on March 13-15, 1980. Members who have attended this seminar previously have found it to be an educational experience. The Chairman will send a letter to each Committee member asking if he would like to attend.

Life Insurance Program - Board of Directors Action

The Chairman reported the Board's concurrence with the Medical Economics Committee action that the Association sponsor for its members the life insurance program offered by Fireman's Fund, American Life Insurance Company.

Legislative Committe

Meeting of the Legislative Committee of the Arizona Medical Association held Saturday, December 8, 1979, at The Pointe Resort, Phoenix, Arizona, convened at 1:05 p.m., Richard O. Flynn, M.D., Dhairman, presiding.

Definition of Terms

Active Support: Means approval of bill and maximum staff time and financial expenditure (including legal counsel) will be made to achieve enactment.

General Support: Means approval of the principle of the bill, but that staff time and financial expenditures will be limited.

No Action: Means no position has been taken one way or another on the bill.

Non-Support: Means disapproval of the bill, but that staff time and financial expenditures will be limited to defeat the bill.

Active Non-Support: Means disapproval of bill and that maximum staff time and financial expenditure (including legal counsel) will be expended to achieve defeat of the bill.

Active Study: Means the bill contains both supportable and opposable elements.

Chairman's Report

Special Interest Legislation

The Chairman requested that committee members make known their areas of special interest in the legislative arena. Members will be assigned specific bills to study, follow-up on and to report back to the committee on its progress in the Legislature.

Physician for A Day Program

Physicians are currently being recruited to serve in the "Physician for a Day" program. All committee members were encouraged to donate one day for the program.

Legislative Review

First Regular Session Update

Committee members received the final status report of the First Regular Session of the 34th Legislature. It was noted that bills which were not enacted during the First Regular Session will very likely be introduced during the Second Regular Session.

Indigent Health Care

Dr. Schamadan reported that because Arizona has never appropriated funds for Medicaid, proposals to finance health care for indigents have been prepared by Governor Bruce Babbitt, Senator Robert Usdane and Representative Diane McCarthy. The three plans were reviewed and discussed. It was agreed that the Association should make themselves available to provide medical input to the authors. *Received for Information.*

Marijuana - Therapeutic Use

Representative Tony West has requested the Arizona Medical

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of constipation

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Constipation acute or chronic

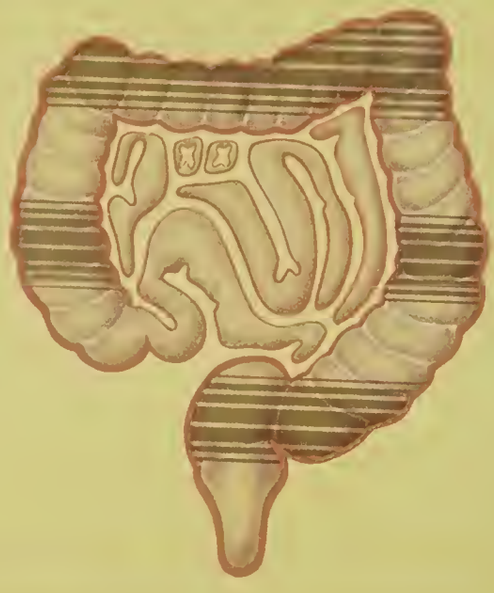
Constipation may be caused by conditions affecting the filling and emptying of the rectum.

Inadequate filling

Interference in propulsive contractions

Impairment of smooth muscle contractility

Obstruction of the lumen





Inadequate emptying

Interference in the stimulation of the defecation reflex

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A unique granular formulation

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SJ-312

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COMPOSITION: Natural vegetable derivatives: A unique blend of psyllium and senna (Plantago Hydrocalloid with Cassia Pod Concentrate).

INDICATION: For relief of constipation.

PATIENT WARNING: Should not be used in the presence of undiagnosed abdominal pain. Frequent or prolonged use without the direction of a physician is not recommended. Such use may lead to laxative dependence.

DIRECTIONS FOR USE—ADULTS: Before breakfast and after the evening meal, one to two rounded teaspoonfuls of Perdiem™ granules should be placed in the mouth and swallowed with a full glass of warm or cold beverage. Perdiem™ granules should not be chewed. After Perdiem™ takes effect (usually after 24 hours, but possibly not before 36-48 hours): reduce the morning and evening doses to one rounded teaspoonful. Subsequent doses should be adjusted after adequate laxation is obtained.

IN OBSTINATE CASES: Perdiem™ may be taken more frequently, up to two rounded teaspoonfuls every six hours.

FOR PATIENTS HABITUATED TO STRONG PURGATIVES: Two rounded teaspoonfuls of Perdiem™ in the morning and evening may be required along with half the usual dose of the purgative being used. The purgative should be discontinued as soon as possible and the dosage of Perdiem™ granules reduced when and if bowel tone shows lessened laxative dependence.

FOR COLOSTOMY PATIENTS: To ensure formed stools, give one to two rounded teaspoonfuls of Perdiem™ in the evening with warm liquid.

DURING PREGNANCY: Give one to two rounded teaspoonfuls each evening.

FOR CLINICAL REGULATION: For patients confined to bed, for those of inactive habits, and in the presence of cardiovascular disease where straining must be avoided, one rounded teaspoonful of Perdiem™ taken once or twice daily will provide regular bowel habits. Take with a full glass of water or beverage.

FOR CHILDREN: From age 7—11 years, give one rounded teaspoonful one to two times daily. From age 12 and older, give adult dosage.

NOTE: It is extremely important that Perdiem™ should be taken with a plentiful supply of liquid.

HOW SUPPLIED: Granules; 100 gram (3.5 oz.) and 250 gram (8.8 oz.) canisters.



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Association to provide assistance in providing research, input, documentation, and constructive suggestions that would enable the State of Arizona to ease the restrictions on the consumption of marijuana by medical patients, particularly for cancer and glaucoma patients. The committee viewed a rough draft of proposed legislation and correspondence relating to the legislation. It was decided not to take a position at this time, however, the committee will offer to provide experts to testify on the issue if requested by the Legislature.

Reconstructive Surgery - Post Mastectomy

Mrs. Gabriel deFreitas presented draft legislation which would provide insurance coverage for breast reconstructive surgery and/or internal or external protheses for patients who have undergone a mastectomy. She noted that some insurance companies do pay for one protheses while others pay of nothing. Representative Jane Dee Hull and Senator Tony Gabaldon will introduce the legislation. There was discussion.

It was moved and carried to give general support to legislation which would provide mandatory insurance coverage for breast reconstructive surgery and/or internal or external protheses for patients who have undergone a mastectomy.

Radiologic Technologists Act

The Committee reviewed the Radiologic Technologists Act and noted problems in physicians offices when a "certified radiologic technologist" is not employed. Considerable discussion ensued. Suggestion was made that ArMA and the Arizona Hosptial Association jointly work with the Radiologic Technology Board and others in an effort to forestall continuing inconvenience, bureaucratic and economic disadvatnages of the new act while at the same time maintaining high quality in x-ray services. It was also suggested that there be communication with the membership concerning the new Radiologic Technologists Act in an effort to realize the extent of the problems as well as working with the Arizona Radiologic Society in providing instructions for proper use of x-ray equipment.

Nurse Practitioners

The Maternal and Child Health Care Committee, during meeting held October 13, 1979, referred proposed legislation concerning nurse practitioners to the Legislative Committee for its review and consideration. The Committe also received the position paper regarding nurse practitioners developed by the Health Manpower Committee and adopted by the Board of Directors. William A. Susong, M.D. informed the Committee of the Phoenix OB/GYN Society and the Arizona Gynecological Nurse Practitoner Associations' combined activity in this matter and reviewed the actions of the Joint Select Committee on Allied Health Professions. It was noted they will not recommend legislation in the upcoming session, however, a proposal will undoubtedly be introduced by individual Legislators. It was noted that the Association will be invited to work with the nurses and legislators to come up with a bill the Medical Association can support.

It was moved and carried to Actively Support Legislation on Nurse Practitioners.

Optometry

Gary Barnett informed the Committee that the Joint Select Committee on Allied Health Professions failed to recommend legislation permitting optometrists the use of diagnostic pharmaceutical agents in their practice and legislation redefining the practice of optometry to include treating any abnormal condition of the human eye. These bills are expected to be introduced during the Second Regular Session.

It was moved and carried to actively non-support legislation permitting Optometrists the use of Diagnostic Pharmaceutical agents in their practice and other legislation redefining Optometry to include the practice of medicine.

Podiatry

Legislation mandating the inclusion of podiatrists on hospital medical staffs is expected to be introduced again during the Second Regular Session. The Joint Select Committee on Allied Health Professions failed to recommend this legislation after their study. The Committee received the position paper developed by the Health Manpower Committee and approved by the Board of Directors as well as a letter to hospital officials. Both of these documents outline the Association's support of hospital's making appropriate bylaw changes to provide for the inclusion of podiatrists as associate members of their medical staffs. Chic Older informed the committee that some hospitals have made the appropriate by-law changes. The committee took no action.

Chiropractic

The Committee reviewed draft legislation by the Chiropractic Association and Senator Wayne Stump which would redefine the scope of chiropractic practice and provide for chiropractic use of clinical laboratories. The committee also reviewed the position paper on chiropractic as developed by the Health Manpower Committee and adopted by the Board of Directors. There was discussion.

It was moved and carried to reaffirm the position paper on chiropractic as adopted by the Arizona Medical Association Board of Directors.

It was moved and carried to actively non-support proposed legislation providing for use of clinical laboratories by chiropractics.

Naturopathy

The Committee reviewed the position paper adopted by the Board of Directors and proposed legislation by the Arizona Naturopathic Physicians Board of Directors. The propsed legislation would greatly expand the scope of practice for naturopaths. The position paper states opposition to the change in definition the legislature proposes.

It was moved and carried to support the position paper on Naturopathy as adopted by the Arizona Medical Association Board of Directors.

Physicians Assistants

The Joint Board of Medical and Ostopathic Examiners has asked support for proposed legislation amending the Physicians' Assistants Act regarding the administration of the board.

It was moved and carried to give general support to legislation which would amend the Physician's Assistants Act regarding the administration of their board.

BOMEX - Advertising, Continuing Medical Education and Hearing Officers

The Board of Medical Examiners will have introduced legislation amending the Medical Practice Act to redefine advertising, clarify the continuing medical education provision and provide for hearing officers. ArMA caused to have this same legislation introduced during the First Regular Session, however it was attached to the chiropractic bill and was not passed.

It was moved and carried to actively support legislation to amend the Medical Practice Act as it relates to the definition of advertising, continuing education and hearing officers.

90-10 Boards

The Committee reviewed proposed legislation to eliminate the 90-10 concept of self-supporting regulatory agencies. The Arizona State Board of Medical Examiners would be included in this legislation. There was discussion.

It was moved and carried to activley non-support legislation which would eliminate the 90-10 concept of self-supporting regulatory agencies.

Certificate of need

The Committee noted the Governor's veto of last year's S.B. 1248 which would have amended the Certificate of Need law. The committee received a report by the AMA outlining the amendments to P.L. 93-641. Dr. Dandoy reported that if

Arizona law is not brought into compliance with federal regulations, Arizona stands to lose many federal dollars. Although no proposed legislation has yet been drafted, DHS will be having something introduced during the Second Regular Session. There was discussion.

It was moved and carried to actively non-support legislation which would require physicians offices to have a certificate of need for equipment.

Behavioral Health Services Act

Dr. Dandoy reported that DHS appointed a Behavioral Health Legislative Work Group which recommended that legislation be developed and introduced to provide for a comprehensive behavioral health services act encompassing drug, alcohol and mental health services. The act would define these services as they regard agencies. The proposed legislation may not be prepared in time for introduction during the Second Regular Session. No action was taken.

Mandatory Health Insurance Coverage for Alcoholism Treatment

Dr. Dandoy reported that, while the Department of Health Services considered submitting legislation mandating health insurance coverage for alcoholism treatment, no bill would be introduced.

Statewide Cancer Registry

Dr. Dandoy informed the Committee of the Department of Health Services plans to introduce legislation to establish a statewide tumor registry. While some hosptials currently have tumor registries, this legislation would pull them all together. DHS will seek an initial appropriation of approximately $53,000. There was discussion. No action was taken.

taken

Serology Tests for Pregnant Women

Legislaiton which died in the closing hours of the First Regular Session requiring a serology in the first trimester or as early as possible during pregnancy will be introduced again on behalf of the Department of Health Services. There was discussion but the Committee took no action.

Licensure of Laboratories Performing Public Health Tests

Currently the Department of Health Services only has authority to regulate clinical laboratories. DHS will cause to have introduced legislation which will allow them to regulate labs doing tests on heavy materials, pesticides, and other environmental tests. In the absence of drafted legislation to review, the Committee took no action.

Health Effects Study Prior to Homes Construction in Subdivisions

Under discussion and to be proposed to the Department of Real Estate by DHS is legislation which would require a health effects study prior to construction of homes in subdivisions. Homes have recently been built on asbestos and uranium dumps causing serious health hazards. Passage of the proposed legislation would preclude future incidences of this type. As no legislation has yet been drafted, the Committee took no action.

Supplemental Appropriation for Tuberculosis Control

Dr. Dandoy reported that the tuberculosis program is about to run out of funds and that legislation requesting a supplemental appropriation will be necessary. The appropriation requested would be approximatley $300,000. Dr. Dandoy further noted that last year there was an increase in the number of new active cases of tuberculosis. The Committee took no action.

Testing for Metabolic Diseases in Newborns

It was reported that several years ago the Legislature passed legislation for the testing of metabolic diseases in newborns but they made no provisions for follow-up. Current law provides that the newborns are tested but gives no assurance they will get into treatment. An appropriation will be requested. No action was taken.

SSI-Disabled Children's Program

The Arizona Attorney General has opined that DHS has no authority to administer the SSI-Disabled Children's Program under Title V of the Federal Social Security Act. DHS will be propsoing Legislation to grant them the authority to identify handicapped children and get them into treatment under the SSI-Disabled Children's Program. No action taken.

Motorcycle Helmets

Statistics since the law requiring motorcycle helmets was repealed show that the wearing of helmets while riding motorcycles is an important preventative measure against serious injury. The Highway Department plans to have legislation introduced which would require motorcyclists to wear helmets. No action taken.

Child Restraints in Automobiles

During the last sesison, on behalf of the Pediatric Society, the Association caused to have introduced legislation which would require the use of child restraints in automobiles. This legislation failed to pass and will be introduced again during the Second Regular Session.

It was moved and carried to actively support Legislation requiring the use of child restraints in automobiles.

Reporting of Maternal Deaths

Dr. Susong requested the committe to consider giving support to legislation which would require reporting of all maternal deaths to the Department c Health Services.

It was moved and carried to support th concept of reporting maternal deaths.

Scientific Assembly Committee

The meeting of the Scientific Assembl Committee of the Arizona Medica Association, Inc. held in the North Cour Room No. 1 at the Pointe Resort, 7677 N 16th Street, Phoenix, Arizona, o Saturday, December 15, 1979, convene at 12:44 p.m., James M. Hurley, M.D. Chairman, presiding.

1980 Scientific Program

The basic format of the 1980 Scientifi Program indicating time slots presentl filled by members of the University o Colorado Health Sciences Cente faculty was received and reviewed b the committee in conjunction with it selection of scientific papers an exhibits to complete the program.

Local Scientific Paper Selection

It was moved and carried to accept the following papers submitted by Arizona physicians:

1. Critical Issues in Coping with Somatizing Patients - Thomas E. Bittker M.D.
2. Shunt Ascites - Volker K.H. Sonntag, M.D.
3. Activities of the Arizona Materna Mortality Committee - William A. Susong, M.D.
4. Hypnotherapy of Hard-Core Smokers - Robert E.T. Stark, M.D.
5. Intraesophageal Acid Instillation and Esophageal Distension Provoke Bronchoconstriction - Lyndon E.Mansfiled, M.D.
6. The Surgical Management of Impotence in Private Practice - Andrew J. Presto, III, M.D.

7 T-Cell Immune Deficiency in the Preoperative Orthopedic Patient: Incidence and Complications - Robert R. Karpman, M.D.

8. Q Fever Hepatitis - Charles E. Hofmann, M.D.
9. Gastric Surgery for Morbid Obesity - Alan Yale Newhoff, M.D.
10. Treatment of Congenital Skull Abnormalties - Arden F. Reynolds, M.D.
11. Breast Cancer: Mammographic Screening - Marcial M. Ebalo, Jr., M.D.
12. Intracranial Microvascular Anastomosis for Cerebral Ischemia - Philip R. Weinstein, M.D.
13. Penicillamine Re-Challenge After Prior Toxicity -Louis Greco, M.D.
14. Mucormycosis and an Anatomically Designed Orbito-Facial Prosthesis - Graham B. Kretchman, M.D.

15. Recent Advances in the Therapy of Coccidioidomycosis -J. Burr Ross, M.D.
16. Toward "Total" Myocardial Revascularization: The Evolution of Methodology and Evaluation of Techniques - R. Leighton Fisk, M.D.
17. Panel on Confidentiality - Thomas E. Bittker, M.D.
18. Cardiac Foreign Bodies - Cecil E. Vaughn, M.D.

Additional Offers to Make Presentations.

It was moved and carried to accept the following additional offers to make presentations,

1. Marion Laboratories - specifically requesting, if possible:
 A. A. Michale Parfitt, M.D. or Louis V. Avioli, M.D., re: Osteoporosis
 B. Col. Hugh D. Peterson, M.D. or John A Boswick, Jr., M.D., re: Burn Surgery
 C. Donald O. Castell, Captain, M.D., USM, re: Gastroenterology.
 D. Dean T. Mason, M.D., re: cardiology
2. Eli Lilly - Specifically requesting Dr. Galloway re: New Advances in Diabetes.
3. Dow Pharmaceuticals' Speakers' Bureau re: Lipids and Hyperlipidemia
4. USV Labs - William James Howard, M.D., re: Sodium Metabolism in the Hypertensive Patient.
5. *Private Practice* Journal - Harry Schwartz, re: medical economics - as a follow-up presentation to the panel being presented on Saturday, April 26, 1980, entitled. "Litigation and the Medical Profession."

Scientific Exhibit Selection

It was moved and carried to accept the following Scientific Exhibits.

1. Uncommon Roentgen Patterns of Pulmonary Tuberculosis - Alex Newman, M.D. and Joseph C. Pinto, M.D.
2. Total Knee Arthroplasty Utilizing a Condylar Replacement System - Joseph A. Dupont, M.D., Robert M. Lumsden, II, M.D., and Edward D. Campbell, Jr., M.D.
3. Antibiotic Use in A Community Hospital - Gerald J. Jogerst, M.D. and Stephen E. Dippe, M.D.
4. The Treatment of Non-Unions of Bones with Electromagnetic Fields - John Krempen, M.D., Jon Zolton, M.D., Richard Sliver, M.D. and Abelardo Sotelo, M.D.
5. Microneurosurgery - L. Philip Carter, M.D., Timothy R. Harrington, M.D. and William L. White, M.D.
6. Stress Control by Biofeedback Training - William E. Crisp, M.D.
7. A New Technique for the removal of Anterior Chamber Intraocular Lenses Through a Keratoplasty Incision - Edward L. Shaw, M.D.
8. Cardiovascular Nuclear Medicine - Arizona Nuclear Medicine Physicians
9. Contact Lenses vs. Patient - Donald R. Miles, M.D., Paul H. Case, M.D., Jon Astle, M.D. and Ophthalmic Diagnostic & Contact Lens Lab
10. Retinal Manifestations of Systemic Disease - Herbert S. Woldoff, M.D. and Melvin Gerber, M.D.

Auxiliary Program

5,000/10,000 Meter Race

It was reported to the committee that Mrs. Joseph (Helen) Hanss would act as chairman of the race scheduled to be held on Thursday, April 24, 1980 at 7:00 A.M.; and, following a discussion, it was determined that the race would be open to doctors, spouses, and exhibitors.

Logo or Theme

The Auxiliary presented a draft logo/theme to be carried throughout the program and in all preliminary informational material, entitled "Decade of decisions," which was accepted by the committee.

1982 Annual Meeting

It was moved and carried to recommend to the Board of Directors that, for financial purposes, the dates of the 1982 annual meeting be set to correspond with the hotel "off-season" in the Phoenix area.

It was further moved and carried that the Camelback Inn, the Arizona Biltmore, and The Pointe Resort, in that order of preference, be contacted regarding the holding of the Arizona Medical Association's 1982 Annual Meeting at their facility, with the specific dates for such meeting yet to be determined.

Correspondence

Board of Director's letter of 10/12/79 re: registration fees *Received.*
Board of Directors' letter of 10/12/79 re: appointment of Dan Morris, M.D., as housestaff representative to the Scientific Assembly Committee *Received.*

Other Business

Panel on "Teenage Sexuality"

Discussion was held regarding the need for a psychiatrist as a panel member for the presentation on "Teenage Sexuality" scheduled for Saturday, April 26, 1980; and it was determined that John T. Clymer, M.D., would submit to the Chairman, for his selection and contact purposes, a list of several possibilities.

Program Adjustment

It was determined by the committee, pending acceptance by Ronald Pfister, M.D. that his presentaton entitled "Urinary Tract Infections in Children" would be moved to a 4:00 p.m. slot on Saturday, April 26, 19890, allowimg those physicians desiring to attend that presenation as well as "Teenage Sexuality" the ability to do so.

Golf Tournament

It was determined that, to alleviate last minute registration, advance fees would be mandatory for the golf tournament.

Specialty Society Recognition

It was determined that the program would specifically designate recognition of the various specialty societies participating by the holding of meetings in conjunction with the annual convention of the Association.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

Arizona Chapter, American Cancer Society
Arizona Heart Institute
Arizona Medical Association
Arizona State Hospital, Phoenix
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates, Phoenix
Maricopa County General Hospital, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
Phoenix Psychiatric Council
St. Joseph's Hospital & Medical Center, Phoenix
St. Lukes's Hospital & Medical Center, Phoenix
St.Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

FEBRUARY

Eighth Annual Taos Lung Disease Symposium

February 22-24, 1980. Sponsor: New Mexico Thoracic Society. Contact: New Mexico Thoracic Society, 216 Truman N. E., Albuquerque, N. 87108. Approved for 13½ hours of category 1 credity by AMA.

Second Annual International Cataract Surgery Symposium

February 18-20, 1980. Sponsor: Arizona Foundation for Ophthalmic Research and Education. Contact: Ronald W. Barnet, M.D., Medical Director, 421 N. 18th St., Ste 105, Phoenix, AZ 85006. (602) 257-1077. Approved for 18 to 20 hours of category 1 credit.

3rd International Conf. on Integrated Cancer Management
February 20-22, 1980. The Pointe Resort, Phoenix AZ Sponsor: Good Samaritan Hospital Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 16 hours of category 1 credit.

Evaluation & Management of G-I Bleeding
February 21, 1980. Williams Air Force Base, Hospital Conf. Room. Sponsor: USAF Manpower & Personnel Center & Surgeon's Office. Approved for 1 hour of category 1 credit.

Seminar on Quality Assurance
February 21-22, 1980, Ramada Inn—East Resort, Phoenix, AZ. Sponsor: Arizona Hospital Association & J.C.A.H. Contact: Cheryl Clark, Arizona Hospital Associaton, 4202 East Raymond Street, Pheix, AZ 85040. Approved for 11 hours of category 1 credit.

Frontiers in Ophthalmology
February 21-23, 1980. La Posada Resort, Scottsdale, AZ. Sponsor: Rockefeller & Abbie Prentic Eye Institute of St. Luke's Hospital, 525 N. 18th St., Phoenix, AZ 85006. Contact: Office of CME St. Luke's Hospital. Approved for 15 hours of category 1 credit.

8th Annual Medicine Conference Advances in Internal Medicine II
February 21-23, 1980. Carefree Inn & Resort, Carefree Arizona 85008. Sponsor: Maricopa County General Hospital. Contact: Myra DaBolt, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 21 hours category 1 credit.

Gastroenterology for Clinicians - New Directions
February 21-23, 1980. Del Webb's TowneHouse, Phoenix, AZ. Sponsor: David C.H. Sun Memorial Institute. Contact: Mrs. David C.H. Sun, David C.H. Sun Memorial Institute, 4129 East Sandy Mt. Rd., Scottsdale, AZ 85253.

Advanced Cardiac Life Support (Instructor Course)
February 22-23, 1980. ArMA Offices 810 W. Bethany Home Rd., Phoenix, AZ. 85013. Sponsor: A.C.E.P., AZ Affiliate American Heart Assoc. & ArMA. Contact: Carol Turner, ArMA offices.Approved for 16 hours of category 1 credit.

The Day of Immunology
February 23, 1980. Paradise Valley Country Club, Homestead Rm. Phoenix. Sponsor: Scottsdale Memorial Hospital, & St. Luke's Hospital Medical Center. Contact: CME office St. Luke's Hospital Medial Center, 525 N. 18th St. Phoenix, AZ 85006. Aproved for 7 hours of category 1 credit.

Anesthesia for the 80's
February 23-24, 1980. Doubletree Inn, Tucson, Az. Sponsor: U of A College of Medicine. Dept. of Anes. Contact: Office of CME and Outreach, AHSC, Tucson, AZ 85724. Approved for 11 hours of category 1 credit.

Pediatric Update 1980
February 25-28, 1980. Sponsor: St. Joesph's Hospital and Medical Center, Dept. of Pediatrics. Contact: Ronald A. Christensen, M.D., Dept. of Pediatric Education. St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Third Annual Mid-Winter Symposium in OB/GYN
February 27- 29, 1980. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Maricopa County Hospital, Dept. of OB/GYN and Phoenix OB/GYN Society. Contact: The Secretary, Phoenix, OB/GYN Society, 333 East Virginia, Ste 222, Phoenix, AZ 85004.

New Mexico Metabolism Symposium
February 28-March 1, 1980. Taos, New Mexico. Contact: Office of Education. Lovelace Medical Center, Albuquerque, New Mexico. (505) 842-7353.

Contemporary Managment of Stroke and Coronary Disese
February 27 - March 1, 1980. Lodges in Taos, New Mexico. Sponosr: Symposia de Santa Fe. Contact: W.J. Levy, M.D., Symposia de Santa Fe, P.O. Box 5175, Santa Fe, New Mexico 85702

Self-Assessment Program V
February 29, March 1, 1980. Arizona Health Sciences Center, Main Auditorium. Sponsor: U of A College of Medicine & American College of Physicians. Contact: Office of CME and Outreach, AHSC, Tucson, AZ 85724.

MARCH

2nd Annual Symposium on Current Concepts in the Managment of Acute and Chronic Pain
March 1-2, 1980. Hyatt Regency, Phoenix, AZ. Sponsor: Maricopa County General Hospital. Contact: George Wallace, M.D., Program Director, MCGH, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Durango, Colorado Ski Symposium
March 5—9, 1980. Sponsor: Albuquerque Academy of Family Physicians. Contact: Albuquerque Academy of Family Physicians, c/o New Mexico Medical Society, 2650 Yale Blvd., S.E., Ste 105, Albuquerque, New Mexico 87106.

Child Abuse & the Air Force Child Avocacy Program
March 6, Wiliams Air Force Base, Hospital Conf. Rm., Contact: USAF Manpower & Personnel Center, Surgeons Office. Approved for 1 hour of category 1 credit.

Antibiotic Use in Life Threatening Situations
March 8, The Adams Hotel, Phoenix, AZ. Sponsor: U of A College of Medicine. Contact: Office of CEM & Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 7 hours of Category 1 Credit.

Family Therapy
March 14-15, Registry Resort, Scottsdale, AZ Sponsor: Phoenix Psychiatric Council Contact: Howard Wulsin, M.D. 267-5747 Approved for 11 hours of category 1 credit.

American Academy of Pediatarics - Infectious Disease & Immunology Review
March 14-16, Arizona Health Sciences Center, Tucson, AZ. Sponosr: U of A College of Medicine, Contact: Office of CME & Outreach, U of A Health Sciences Center Tucson, AZ 85724.

6th Annual MCGH Urological Seminar
March 15-16, Doubletree Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: CME office MCGH, 2601 E. Roosevelt, Phoenix, AZ. Approved for 16 hours of category 1 credit.

Bilateral Renal Agenesis
March 20, Williams Air Force Base, Hospital Conf. Rm.,. Contact: USAF Manpower & Personnel Center, Surgeon's Office. Approved of 1 hour of category 1 credit.

Frontiers in Cardiovascular Disease
March 20-22, La Posada Resort, Scottsdale, Az. Sponsor: St. Luke's Hospital and Medical Center. Contact: Office of CME, St. Luke's Hospital & Medical Center, 525 N. 18th St., Phoenix, AZ 85006. Aproved for 21 hours of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
March 21-22, Arizona Medical Association offices, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Sponsor: ACEP, Arizona Affiliate American Heart Assn & ArMA. Contact: Carol Turner, ArMA, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Clinical Recognition & Managment of Heart Disease
March 27-29, Arizona Health Sciences Center, Tucson, Az, Sponsor: U. of A. College of Medicine & American College of Physicians. Contact: Office of CME & Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 18½ hours of category 1 credit.

Gynecologic Endocrinoloyg
March 28-30, Hyatt Regency Hotel, Tucson, AZ. Sponsor: U of A Tucson, AZ. Contact: Office of CME & Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 16 hours of category 1 credit.

1980 Arizona Chest Symposium
March 28-30, 1980. Doubletree Inn, Tucson, Arizona. Sponsor: University of Arizona College of Medicine, and Tucson Medical Center. Contact: Linda Alpert, R.N., Symposium Coordinator, Tucson Medical Center, P.O. Box 6067, Tucson, AZ 85733. Approved for 16 hours of category 1 credit.

Understanding Arthritis
March 30, Arizona Biltmore, Phoenix, AZ. Sponsor: Am. Society of Clinical Rhuematology, & St. Luke's Hospital & Medical Center. Contact: CME office St. Luke's Hospital & Medical Center, 525 N. 18th St., Phoenix, AZ 85006. Approved for cagetory 1 credit.

The Care of the Acute Spinal Cord Injured

March 15, 1980
St. Joseph's Hospital and Medical Center
Cullen Auditorium
350 West Thomas Road, Phoenix, Arizona 85013

Sponsors: St. Joseph's Hospital & Medical Center
Barrow Neurological Institute
Good Samaritan Hospital
Southwest Regional System for
Treatment of Spinal Cord Injury

Cost: $25 for physicians, $15 for nurses and paramedics

Time: 8:30 A.M. registration, 9 A.M. - 4:30 P.M. meeting.

CME Credits: Approved for 6 hours of category 1 for physicians.
Approval pending for 6 contact hours for nurses

Guest Speakers: Thomas B. Ducker, M.D.
Professor & Chairman
Department of Neurosurgery
University of Maryland

Michael F. Dillingham, M.D.
Assistant Professor
Orthopedics
Stanford University

Speakers from the faculty of
Barrow Neurological Institute
Good Samaritan Hospital

For additional information contact:
Volker K.H. Sonntag, M.D.
Barrow Neurolgical Institute
St. Joseph's Hospital & Medical Center
350 West Thomas Road
Phoenix, AZ 85013

Register me for:
The Care of Acute Spinal Cord Injured
St. Joseph's Hospital & Medical Center
Barrow Neurological Institute
350 West Thomas Road, Phoenix, Arizona 85013

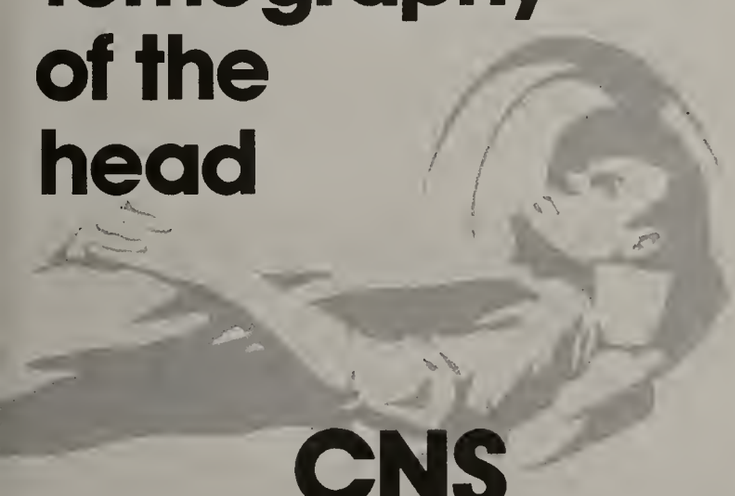
Name: _____

Address: _____

$25 for physicians ☐ **$15** for nurses ☐ **$15** for paramedics ☐

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computed tomography of the head





CNS

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Alan Yudell, MD—Ralph B. Lilly, MD—Barry A. Hendin, MD

APRIL

Treatment of Common Eye Disorders
April 3, Williams Air Force Base, Hospital Conference Room. Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon s Office. Approved for 1 hour of category 1 credit

Emergency Room Radiology
April 11-13, 1980. Arizona Biltmore, Phoenix, Arizona. Sponsor: Maricopa County General Hospital. Contact: Austin R. Sandrock, M.D., Program Chairman, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Occupational Medicine for the Practicing Physician - Part II
April 12, The Adams Hotel, Phoenix, Arizona. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, UAHSC, Tucson, AZ 85724. Approved for 7 hours of category 1 credit.

Vectorcardiography - Basic Workshop
April 16-18, Hilton Hotel, Scottsdale, Arizona. Sponsor: Good Samaritan Hospital & American College of Cardiology. Contact: Good Samaritan Hospital, CME office, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 16 hours of category 1 credit.

5th Annual Update Primary Care
April 16-19, Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 25 hours of category 1 credit.

Chronic Obstructive Pulmonary Disease
April 17, Williams Air Force Base, Hospital Conf. Rm., Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon's Office. Approved for 1 hour of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
April 18-19, Arizona Medical Association, 810 W. Bethany Home Road, Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate-American Heart Assn. & ArMA. Contact: Carol Turner, Arizona Medical Assn. Approved for 16 hours of category 1 credit.

Infectious Diseases for the Practicing Physicians
April 19, Good Samaritan Hospital, Education Bldg., Phoenix, Arizona. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 7 hours of category 1 credit.

1980 Third Annual Arizona Emergency Medicine Symposium
April 23-25, 1980, Safari Resort, Scottsdale, Arizona. Sponsors: Arizona Emergency Medical Systems, Inc.; Arizona Chapt Am. College of Emergency Physicians, Arizona Chap. of Emergency Dept. Nurses, Assoc., Arizona Paramedic Cont. Educ. Program. Contact: Jennie Johnston, Symposium Coordinator. 301 W Osborn Rd., Ste 112, Phoenix, AZ. 85013.

Arizona Medical Association 89th Annual Meeting
April 23-27. The Pointe Resort, Phoenix, AZ. Sponsor: The Arizona Medical Association, Inc. Contact: Bruce E. Robinson, Executive Dir., ArMA, 810 W. Bethany Home Road, Phoenix, AZ 85013. Approved for category 1 credit.

Real Time Ultrasound
April 25-27, Doubletree Inn, Scottsdale AZ. Sponsor: Good Samaritan Hosptial. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 10 hours of category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Edward B. Diethrich, M.D., Medical Dir.

Clinical Conference Cardiovascular Medicine
Third Tues., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

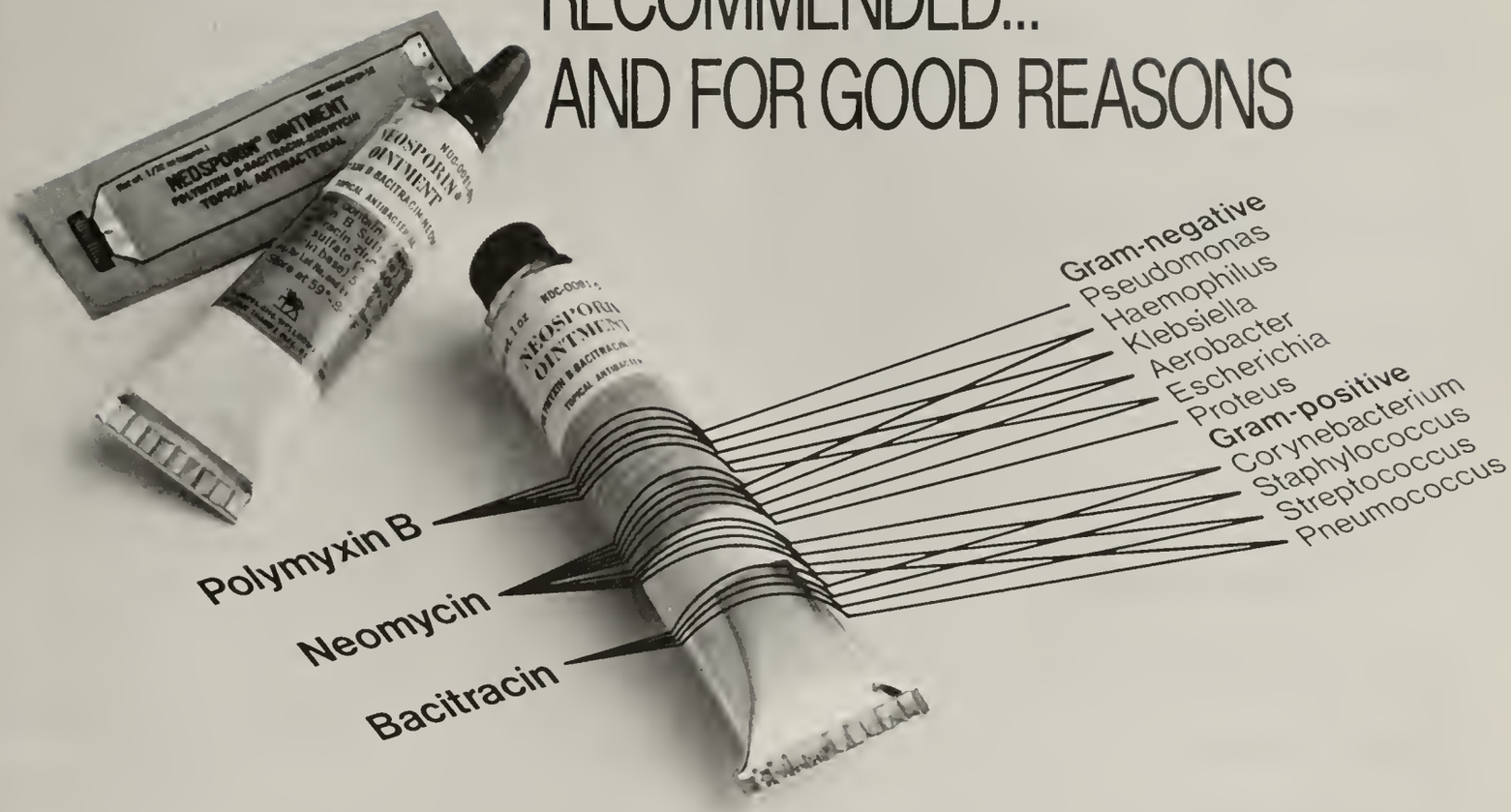
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.
Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists
Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

IT'S HIGHLY RECOMMENDED... AND FOR GOOD REASONS



1. provides broad-spectrum, overlapping antibacterial effectiveness against common susceptible pathogens, including staph and strep
2. helps prevent topical infections, and treats those that have already started
3. it's good medicine for abrasions, lacerations, open wounds, primary pyodermas, secondarily infected dermatoses; and it's painless and cosmetically pleasing
4. contains three antibiotics that are rarely used systemically
5. you can recommend it in any of the three convenient package sizes: 1 oz tube, ½ oz tube, or the versatile, single-use foil packet



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NEOSPORIN® Ointment

(polymyxin B-bacitracin-neomycin)

Each gram contains: Aerosporin® (Polymyxin B Sulfate) 5,000 units, bacitracin zinc 400 units, neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base); special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

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CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.

Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucosn, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.

Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.
Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm
Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.
Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.
Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.
Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North
Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.
Pediatric Grand Rounds
3rd. Tuesday, 7:30-8:30 A.M., Contact: Paul Bergeson, M.D.
Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.
Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.
Dr. Finger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.
Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.
OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.
PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.
Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.
GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.
Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora
Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.
Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology
Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.
Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.
Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.
Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.
Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.
PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.
Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman
Nephrology Conference
1st Monday, 12:30 P.M., Contact: Alan Cohn, M.D.
Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.
Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.
Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.
Gynecology Conference
5th Tuesday, 12:30 P.M., Contact: J. Wurzel, M.D.
Neurology Conference
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.
Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.
Clinical Pharmacology
4th Wed., 12:30 P.M., Contact L. Gardner, Pharm. D.
Clinical Pathology Conference
2nd Wed., 12:30 P.M., Contact: J. Fleishman, M.D.
Medical Conference - Mortality/Morbidity
3rd Wed., 12:30 P.M., Contact: J. Goldberger, M.D.
Rheumatology Conference
1st Wed, 12:30 P.M., Contact: J. Goldberger, M.D.
Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.
Clinical Correlation
3rd Thursday, 12:30 P.M., Contact: J. Goldberger, M.D.
Endocrine Conference
2nd Thurdsday, 12:30 P.M., Contact E. Munjack, M.D.
OB/GYN Dept. Meeting
2nd Thurday, 2 P.M., Contact J. Wurzel, M.D.
GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.
OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel, M.D.
Chest Conference
2nd & 4th Fridays, 12:30 P.M., Contact: D. Engelsberg, M.D.
Dermatology Conference
3rd Friday, 12:30 P.M., Contact: P. Lynch, M.D.
Hematology Conference
1st Friday, 12:30 P.M., Contact: S. Ketchel, M.D.
Medical Conference
5th Friday, 12:30 P.M., Contact: J. Goldberger, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Steven Schaffner, M.D.

Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.
Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.
Hepatology Conference
2nd Tuesday, 1:00 P.M., Contact: Walt Koppenbrink, M.D.
OB/GYN Dept. Grand Rounds
Weekly Tuesday, 12 Noon, Santa Cruz Room
Obstetrical Problem Conference
Weekly Tuesday, 7:15 A.M., Yavapai Rm.
Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.
Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.,Contact: Robert Ganelin, M.D.
Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42
Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.
Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.
OB/Pernatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.
OB/Neonatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.
Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.

Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.
Cardiology Conference
Weekly Thurs., 2 P.M., Santa Cruz Rm.
OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.
GYN Endocrine Seminar
1st Friday, 12:30 P.M., Sanata Cruz Rm.
GYN Grand Rounds
Weekly Friday, 1:30 P.M., Sanat Cruz Rm.
OB/GYN Surgical Pathology Conf.
Weekly Friday, 7 A.M., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.

Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon
OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.
Clinical Staff Teaching Conference, Rm. A.
Wed. Weekly, 8:00 A.M.
Family Practice/Emergency Room Teaching Conference
Thursday Weekly, 7:30-8:30 A.M., Conf. Rm. A, Contact: Drs. L. Moher & L. Fairbanks.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave. Phoenix, AZ. 85036. Contact: George Scharf, M.D., Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.
Tumor Board Conference
Weekly Friday, 12:00 P.M., Kiva Rm., Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th St., Scottsdale, AZ 85251. Contact: W. S. Williams, M.D. Approved for category 1 credit.

Family Practice Conference
1st Monday, 12:30 P.M., Doctor's Lounge
Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge
Neurology & Neurosurgery Conference
3rd Monday, 12:30 P.M., Doctors' Lounge
Internal Medicine-Clinical Pathlogical Conference
4th Monday, 12:30 P.M., Doctors' Lounge
Pulmonary Medicine Conference
1st Tuesday, 12:30 P.M., Doctors' Lounge
Cardiology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge
Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge
Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
Cardiopulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
OB/GYN Depart. Meeting & Conference
2nd Wed., 12:30 P.M., Doctors' Lounge
Trauma Conference
3rd Thurs., 12:30 P.M., Doctors' Lounge
Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge
Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge
GI Medical-Surgical-Radiological Conference
2nd Friday, 12:30 P.M., Doctors' Lounge
Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 P.M., 1st Floor Conf. Rm.
Medical Grand Rounds
Weekly, Wed., 8:00 A.M., 1st Floor Conference Rm.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 A.M., Contact: J. Kipp Charlton, M.D.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday
Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly Monday, except last, 12 Noon, Contact: J. Fernadez, M.D.
Dermatology Conference
4th Monday, 5:15 P.M., Contact: R. Friedman, M.D.
Perinatal Conference
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.
Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.
Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact: L. Mann, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.
Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.
Family Practice Meeting
2nd Wednesday, 12:30 P.M., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.
Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.
Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.
Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.
Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.
OBGYN Pathology Conference
Weekly Thursday, except 2nd, 2:00 P.M., Contact: J. Wurzel, M.D.
Surgical Literature Course
2nd Thursday, 7:00 P.M., Contact: P. Whitney, M.D.
Tumor Conference
Weekly Thursday, 12 Noon.
G—I Conference
Weekly Friday, 12 P.M., Contact: C. Krone, M.D.
Inter-Hospital Medicine Conference
Weekly Friday, 7:15 P.M., Contact: S.V. Hilts, M.D.
OBGYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.
OBGYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

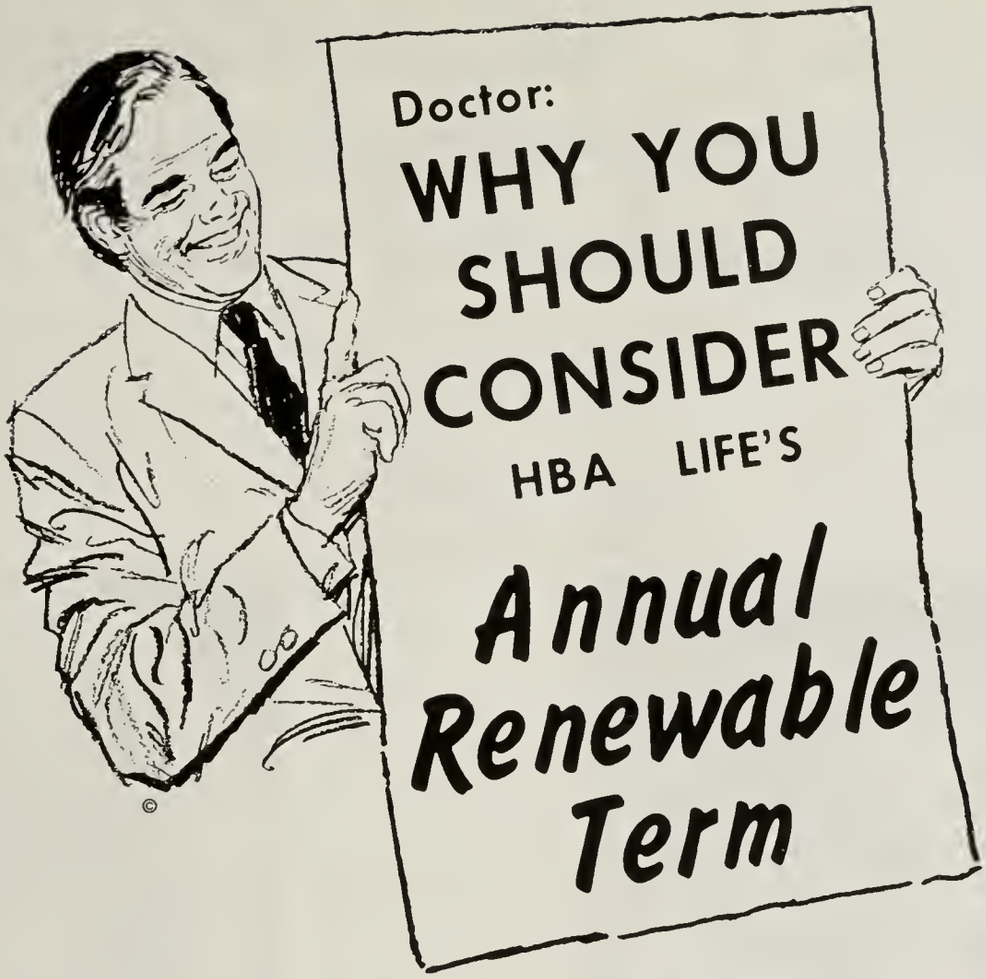
Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403
Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 P.M., HSC Auditorium, Contact: Cancer Center
Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.
Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez
Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.
Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn
Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.
Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch
Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson
GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus
GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter
Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Room 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.
Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn
Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern
Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.
Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson
Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.
Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.
Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford
Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room
Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross
Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross
Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann
Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley
Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs
Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson
Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones
Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.
Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.
Psychiatric Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. R. Cutts
Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital
Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.
Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson
Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655
Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich
Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.
Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C. **Uroradiology (Genitourinary Radiology)**
2nd & 4th Mondays, 7:30- 8:30 A.M., AHSC, Contact: Dept. of Radiology
Renal Pathology Conference
1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.
Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Rm.
Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.
Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.
Trauma Conference
Every Thursday,4-5 p.m. UAHSC, Rm. 5505.
Ward Grand Rounds - Trauma
Weekly Tuesday, 8:00 A.M., Contact: Dr. M. Silverstein.
Toxicology Conference
Weekly Tuesday, 8:00 A.M., Contact: Dr. Keith Likes
Section.
Tucson Ultrasonography Group
Weekly Wed., 4:30 P.M., AHSC, Contact: Dr. I. Freundlich.
General Urology Conference
Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heibrumn, M.D. Approved for Category 1 credit.

GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Surgical X-Ray Conf. & Bedside Teacking Rounds
Weekly Monday, 4 P.M., RM. 3134, Contact: Dr. Mertz, Ext 493.
1st, 2nd & 3rd Wed., 10 A.M. - C118, Contact: Dr. Roberts, Ext. 426.
Surgery/Pathology Conf. & Tissue Review
1st & 3rd Tuesday, 4 P.M., RM. 2128, Contact: Dr. Likos & Dr. Mertz.
Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., T-5, Contact: Drs. Sanowski & Schaffner
Dermatology Conference
1st, 2nd, 3rd Wednesday, Rm. C-118, Contact: Dr. Roberts, Ext. 674.
Cancer Symposium
Weekly Wed., 1 P.M., T-5, Contact: Dr. Byrne, Ext. 426.
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wed,'., 4 P.M., Rm 3134. Contact: Dr. Mertz, Ext. 493.
Medical Surgical Chest Conference
1st & 3rd Thursday, Contact: Dr. Rohwedder or Dr. Gil.
Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5.
Gastrointestinal Rounds
Weekly Thursday, 1 P.M., Rm. D-446.
Surgery-Pathology Conference
Weekly Thursday, 2 P.M., Room 2128
Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller
GI Resident Conference
Weekly 1 P.M., Room D-446.
Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.



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If you would like more information, we will be glad to send it to you. Please phone us at the number below.

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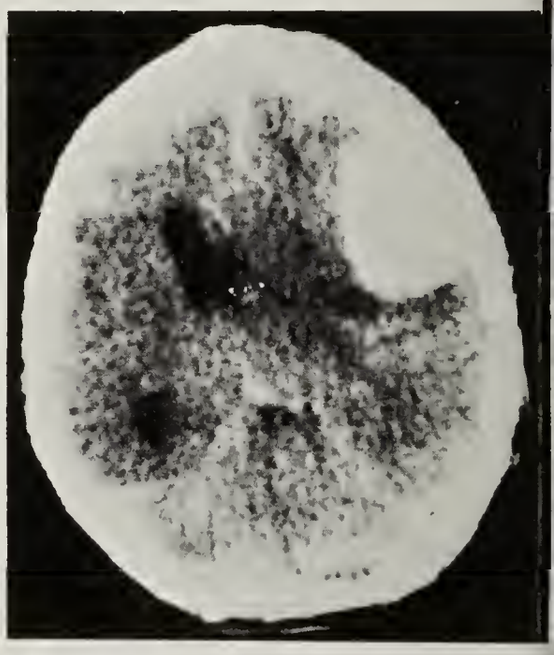
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ROBERT S. WALDMAN, M.D.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for category 1 credit.

G.I. Rounds
Monthly Wed., 10-12 Noon, Contact: Drs. Kozareck & Fellows.
Medical Lectures
Weekly Thursday & Friday, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.

TUCSON VETERANS ADMINISTRATION MEDICAL CENTER

3601 South Sixty Ave., Tucson, AZ 85723. Contacts listed below. Approved for category 1 credit.
Medical Surgical Chest Conference
Weekly Tuesday, 2 P.M., Contact: Dr. Young
Medical Grand Rounds
Weekly Wed., 12-1:00 P.M., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. Putnam
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 P.M., Rm. N318, Contact: Dept. of Internal Medicine.
Vascular Radiology, Interesting Case Conf.
Weekly Thursday, 12:00 Noon.
Neurology Grand Rounds
Weekly Friday, 12 P.M., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:Alan Winfield, M.D. Approved for category 1 credit.

Radiology Conference
1st Tuesday, 7:00 A.M.
Operation Outreach
2nd Tuesday, 6:30 P.M.
Pathology Conference
4th Tuesday, 7:00 A.M.
Operation Outreach
2nd Wednesday, 7:00 A.M.

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Dates and Locations

San Diego February 16 and 17, 1980, Sheraton-Harbor Island, 1380 Harbor Island Drive, San Diego, California 92199, (714) 291-2900

San Francisco March 1 and 2, 1980, Holiday Inn - Fisherman's Wharf, 1300 Columbus Avenue, San Francisco, California 94133, (415) 771-9000, Holidex Number 2458

Santa Barbara March 8 and 9, 1980, Santa Barbara Biltmore, 1260 Channel Drive, Santa Barbara, California 93108, (805) 969-2261

Phoenix, Arizona March 22 and 23, 1980, Camelback Inn, Scottsdale, 5402 East Lincoln Drive, Scottsdale, Arizona 85252, (602) 948-1700

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Lecturers

Leland Yeoman, D.D.S.
Successful, multi-million dollar real estate investor and practicing dentist.

Dennis Peterson
Real Estate Broker, Investment Consultant
President of a large property management firm.

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REGISTRATION FORM

Mail this registration form with check ☐ money order ☐ or your Mastercharge or BankAmericard Number _____ to: Santa Barbara Seminars, Post Office Box 899, Summerland, California 93067

Name _____ Address _____

City _____ State _____ Zip _____

Indicate number of attendees and which day or days they plan to attend.

First Day - Number of People _____ Second Day - Number of People _____

Names: _____ Names: _____

_____ _____

_____ _____

Choice of Seminar Dates and Locations _____

Signature: _____

NOTE: Participants responsible for their own hotel reservations. Call early.

89th Annual Meeting of the Arizona Medical Association, Inc.

50th Annual Meeting of the ArMA Auxiliary

The Pointe Resort, Phoenix, AZ

April 23-27, 1980

• **Business Meetings** •
Board of Directors Meetings
Executive Committee Meetings
House of Delegates Sessions 1 & 2
(Hoyt D. Gardner, M. D. President AMA will address 2nd Session)
Maricopa County Caucus
Pima County Caucus
Reference Committees

• **Scientific Sessions** •
Guest Faculty from the University of Colorado Health Sciences Center
61 Different Presentations
PM & R Scientific Sessions
Scientific Exhibits
Breakfast Panel Programs
Physicians' Families Program



• **Luncheons** •
ArMA Auxiliary
Past Presidents' Luncheon
Specialty Society Luncheons

• **Fun Time** •
Golf & Tennis Tournaments
Six Mile Fun Run
Western Steak Fry
Presidents' Banquet
ArMPAC Banquet
Arts & Crafts Show

ARIZONA MEDICAL ASSOCIATION AUXILIARY

CREATIVE MOMENTS '80



ARTS & CRAFTS SHOW APPLICATION

INSTRUCTIONS:

1. **Complete form and mail to:**
 Mrs. Sandy Brooks
 6540 E. Ironwood Drive
 Paradise Valley, AZ 85253

2. **Entries are limited to:**
 Adults Three per person.
 Youth (*13 years through 17 years*) Two per person.
 Child (*12 years and under*) Two per person.

3. **Deliver entries for display to:**
 The Pointe Resort Grande Ballroom, 7677 N. 16th Street, Phoenix, starting at 12 Noon on Thursday April 24, 1980.
 Items will be on display Friday, Saturday and Sunday until noon (April 27, 1980.)

4. **Entries MUST be picked up between 12 Noon and 1 P.M. on Sunday April 27, 1980.**

.....

Registration Form:

I would like the following items in the **Creative Moments '80** to be held April 25-27, 1980 at The Pointe Resort, 7677 North 16th Street, Phoenix, Arizona.

Describe In Detail	Exhibited Professionally yes or no	Kit yes or no	Own Design yes or no	Check One Child	Youth	Adult

(One Form Per Person Please)

Name: _____ **Phone:** _____

Address: _____

For Further Detail Contact: **Mrs. Sandy Brooks**
6540 E. Ironwood Drive
Paradise Valley, Arizona 85253
Phone: 948-9090

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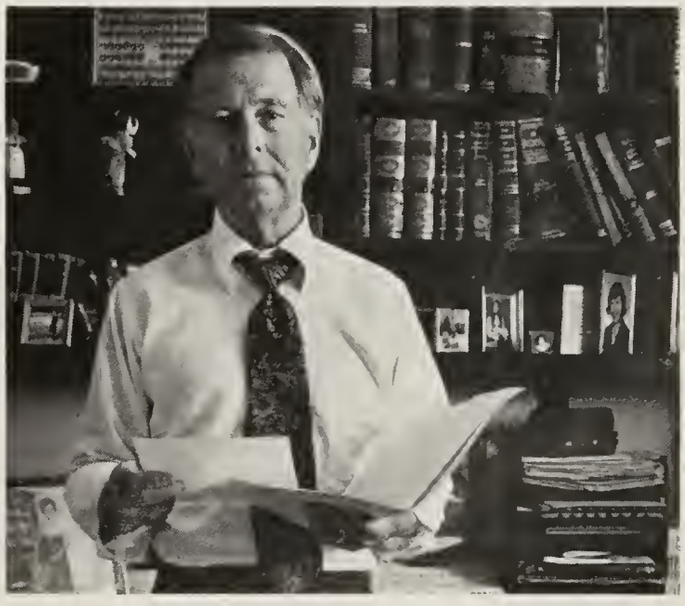
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INDEX TO ADVERTISERS

Arizona Laminating 72
Arizona Medical Services 76
Burroughs Wellcome
Neosporin Topicals 115
Boehringer Ingelheim
Catapres 88
Camelback Hospital 74
Classified Ads 126, 127
Computed Neuorological Scanning Center 113
Computed Tomography 120
Comt-U-Med 67
Doctors Central Directory 126
Doctors Hospital 73
Eli Lilly & Co.
V-Cillin K 63
HBA Life Insurance 119
Health Agencies of the West 75
House of Mailings 126
Le Continental 126
Medical Bookstore 72
Merrell National
Bentyl 70, 71, 72
Quinamm 86, 87
Mica Insurance Co. 68
Mullen Medical Service 126
Pfizer Laboratories
Sinequan 64, 65, 66
Roche Labs
Librium Second Cover, 61, 62
Valium Third Cover, Fourth Cover
Roswell Bookbinding 62
Santa Barbara Seminars 121
Smith Kline & French
Tagament 69
Danny T. Sievert
Insurance 126
The Care Of the Acute
Spinal Cord Injured 113
William H. Rorer, Co.
Perdiem 105, 106, 107, 108
Western Physicians
Purchasing Assoc. 124

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MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

(ISSN 0004-1556)

89th ArMA Annual Meeting
50th ArMA Auxiliary Convention
Program Issue

SEMINARS IN CONTINUING EDUCATION

CARDIOLOGY

AV Sequential and Atrial Pacemakers (Special Indications) 156
Dietmar Gann, M.D., et al

GASTROENTEROLOGY & LIVER DISEASE

Recurrent Abdominal Pain In Children 158
Stephen Glouberman, M.D.

NUTRITION

Dietary Management in Diabetes Mellitus 160
C. A. Nugent, M.D.

OBSTETRICS AND GYNECOLOGY

Nutrition an Important Part of Obstetrical Care 163
Glenn Lippman, M.D.

ONCOLOGY

Renal Cell Carcinoma (Hypernephroma) .. 164
Thomas H. Stanisic, M.D.

PSYCHIATRIC DISORDERS

Stress Among Medical Students 167
Murray DeArmond, M.D.

RADIOLOGY

Case of the Month #41 173
Cary J. Stegman, M.D., et al

SPECIAL ARTICLE

Arizona Physicians' Attitudes Toward Consumers Physicians and Health Care 174
Stephen W. Brown

STATE OF THE ART

Thrombotic Thrombocytopenic Purpura 180
Gary Goodman, M.D.

EDITORIALS

A Program of Primary Care Education at the University of Arizona 184
Anita M. Stanford,M.D., et al

Auxiliary Highlights Yavapai County 185
Mrs. John T. Clymer

CORRESPONDENCE 186

MEDICAL HISTORY

James R. Moore, M.D. An Appreciation on his 90 Birthday 187
John W. Kennedy, M.D.

89th ANNUAL MEETING PROGRAM

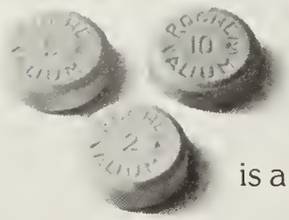
Schedule of Events 193
Board of Directors 200
Guest Speakers 202
ArMA Staff 204
Scientific Assembly Committee 205
ArMA Auxiliary Board of Directors 206
Auxiliary Presidents 207
Schedule of Events 208

RMA REPORTS 212

UTURE MEETINGS 216

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Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults:* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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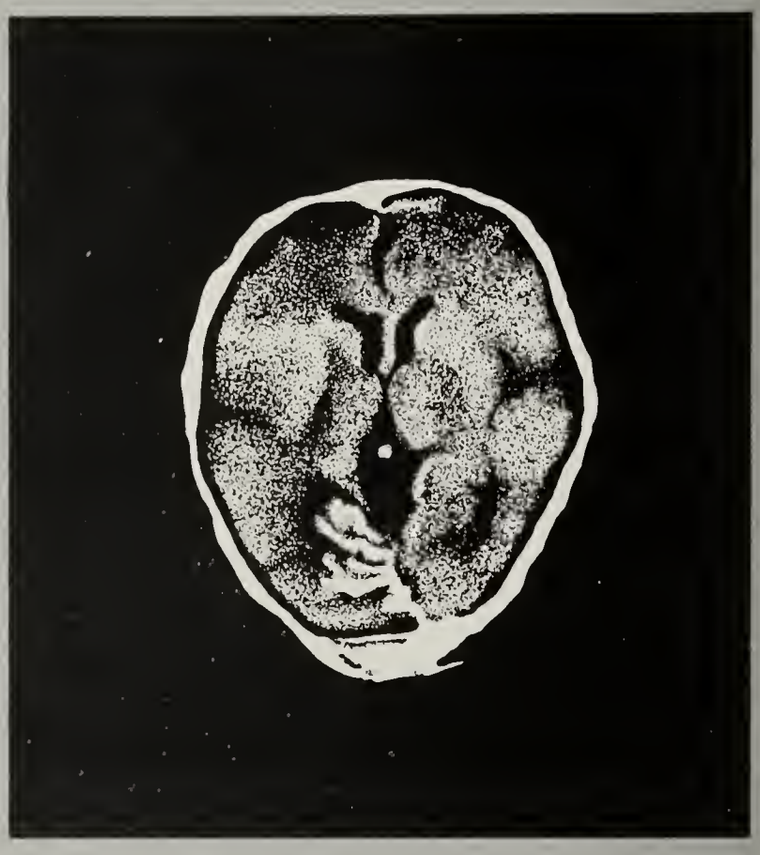
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(miconazole)

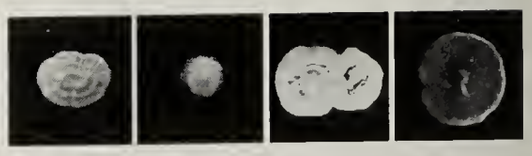
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(miconazole)

for intravenous infusion

DESCRIPTION: MONISTAT i.v. (miconazole), 1-[2-(2,4-dichlorophenyl)-2-[(2,4-dichlorophenyl) methoxyl] ethyl]-1H-imidazole, is a synthetic antifungal supplied as a sterile solution for intravenous infusion. Each ml of this solution contains 10 mg of miconazole with 0.115 ml PEG 40 castor oil, 1.0 mg lactic acid USP, 0.5 mg methylparaben USP, 0.05 mg propylparaben USP in water for injection. Miconazole i.v. is a clear colorless to slightly yellow solution having a pH of 3.7 to 5.7.

CLINICAL PHARMACOLOGY: MONISTAT i.v. is rapidly metabolized in the liver and about 14% to 22% of the administered dose is excreted in the urine, mainly as inactive metabolites. The pharmacokinetic profile fits a three-compartment open model with the following biologic half-life: 0.4, 2.1, and 24.1 hours for each phase respectively. The pharmacokinetic profile of MONISTAT i.v. is unaltered in patients with renal insufficiency, including those patients on hemodialysis. The in-vitro antifungal activity of MONISTAT i.v. is very broad. Clinical efficacy has been demonstrated in patients with the following species of fungi: *Coccidioides immitis, Candida albicans, Cryptococcus neoformans, and Paracoccidioides brasiliensis.*

Recommended doses of MONISTAT i.v. produce serum concentrations of drug which exceed the in-vitro MIC values for the fungal species noted above. Doses above 9 mg/kg of MONISTAT i.v. produce peak blood levels above 1μg/ml in most cases. The drug penetrates into joints.

INDICATIONS: MONISTAT i.v. is indicated for the treatment of the following severe systemic fungal infections: coccidioidomycosis, candidiasis, cryptococcosis, paracoccidioidomycosis, and for the treatment of chronic mucocutaneous candidiasis. However, in the treatment of fungal meningitis and urinary bladder infections an intravenous infusion alone is inadequate. It must be supplemented with intrathecal administration and bladder irrigation. Appropriate diagnostic procedures should be followed and MIC's should be determined.

MONISTAT i.v. should not be used to treat common trivial forms of fungal diseases.

CONTRAINDICATIONS: MONISTAT i.v. is contraindicated in those patients who have shown hypersensitivity to it.

WARNINGS: Rapid injection of undiluted MONISTAT i.v. may produce transient tachycardia or arrhythmia.

PRECAUTIONS: Before a treatment course of MONISTAT i.v. is started, the physician should make sure that the patient is not hypersensitive to the drug product. MONISTAT i.v. should be given by intravenous infusion. The treatment should be started under stringent conditions of hospitalization but subsequently may be given to suitable patients under ambulatory conditions with close clinical monitoring. It is recommended that an initial dose of 200 mg be given with the physician in attendance. It is also recommended that clinical laboratory monitoring including hemoglobin, hematocrit, electrolytes and lipids be performed.

It should be borne in mind that systemic fungal mycoses may be complications of chronic underlying conditions which in themselves may require appropriate measures.

JANSSEN PHARMACEUTICA INC.
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Please send me more information about the use of MONISTAT i.v.™ (miconazole) in systemic candidiasis and other systemic mycoses.

_____ M.D.

Address _____

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Specialty _____

February, 1980

Pregnancy: Reproductive studies with MONISTAT i.v. in rats and rabbits revealed no evidence of impaired fertility or harm to the fetus. There are no data, however, on the use of the drug in pregnant women.

Children: Since the safety of miconazole i.v. in children under one year of age has not been extensively studied, its benefits in this age group must be weighed against the possible risks involved.

ADVERSE REACTIONS: Adverse reactions which have been observed with MONISTAT i.v. therapy include phlebitis, pruritus, rash, nausea, vomiting, febrile reactions, drowsiness, diarrhea, anorexia and flushes. In the U.S. studies, 29% of 209 patients studied had phlebitis, 21% pruritus, 18% nausea, 10% fever and chills, 9% rash, and 7% emesis. Transient decreases in hematocrit and serum sodium values have been observed following infusion of MONISTAT i.v. Thrombocytopenia has also been reported. No serious renal or hepatic toxicity has been reported. If pruritus and skin rashes are severe, discontinuation of treatment may be necessary. Nausea and vomiting can be mitigated with antihistaminic or antiemetic drugs given prior to MONISTAT i.v. infusion, or by reducing the dose, slowing the rate of infusion, or avoiding administration at mealtime.

Aggregation of erythrocytes or rouleau formation on blood smears has been reported. Hyperlipemia has occurred in patients and is reported to be due to the vehicle, Cremophor EL (PEG 40 castor oil).

DRUG INTERACTIONS: Drugs containing cremophor type vehicles are known to cause electrophoretic abnormalities of the lipoprotein. These effects are reversible upon discontinuation of treatment but are usually not an indication that treatment should be discontinued.

Interaction with the coumarin drugs resulting in an enhancement of the anticoagulant effect has also been reported. In cases of simultaneous treatment with MONISTAT i.v. and coumarin drugs, the anticoagulant effect should be carefully titrated since reductions of the anticoagulant doses may be indicated.

DOSAGE AND ADMINISTRATION:

DOSAGE

Adults. The doses may vary with the diagnosis and with the infective agent, from 200 to 1200 mg per infusion. The following daily doses, which may be divided over 3 infusions, are recommended:

Organism	Dasage Range*	Duration of Successful Therapy (weeks)
Coccidioidomycosis:	1800 to 3600 mg per day	3 to >20
Cryptococcosis:	1200 to 2400 mg per day	3 to >12
Candidiasis:	600 to 1800 mg per day	1 to >20
Paracoccidioidomycosis:	200 to 1200 mg per day	2 to >16

*May be divided over 3 infusions.

Repeated courses may be necessitated by relapse or reinfection.

Children. A total daily dose of about 20 to 40 mg/kg is generally adequate. However, a dose of 15 mg/kg body weight per infusion should not be exceeded.

ADMINISTRATION: MONISTAT i.v. should be diluted in at least 200 ml of fluid. The diluent of choice is 0.9% sodium chloride or alternatively Dextrose 5% injectable solution. The intravenous infusion should be given over a period of 30 to 60 minutes.

Generally, treatment should be continued until all clinical and laboratory tests no longer indicate that active fungal infection is present. Inadequate periods of treatment may yield poor response and lead to early recurrence of clinical symptoms. The dosing intervals and sites and the duration of treatment vary from patient to patient and depend on the causative organism.

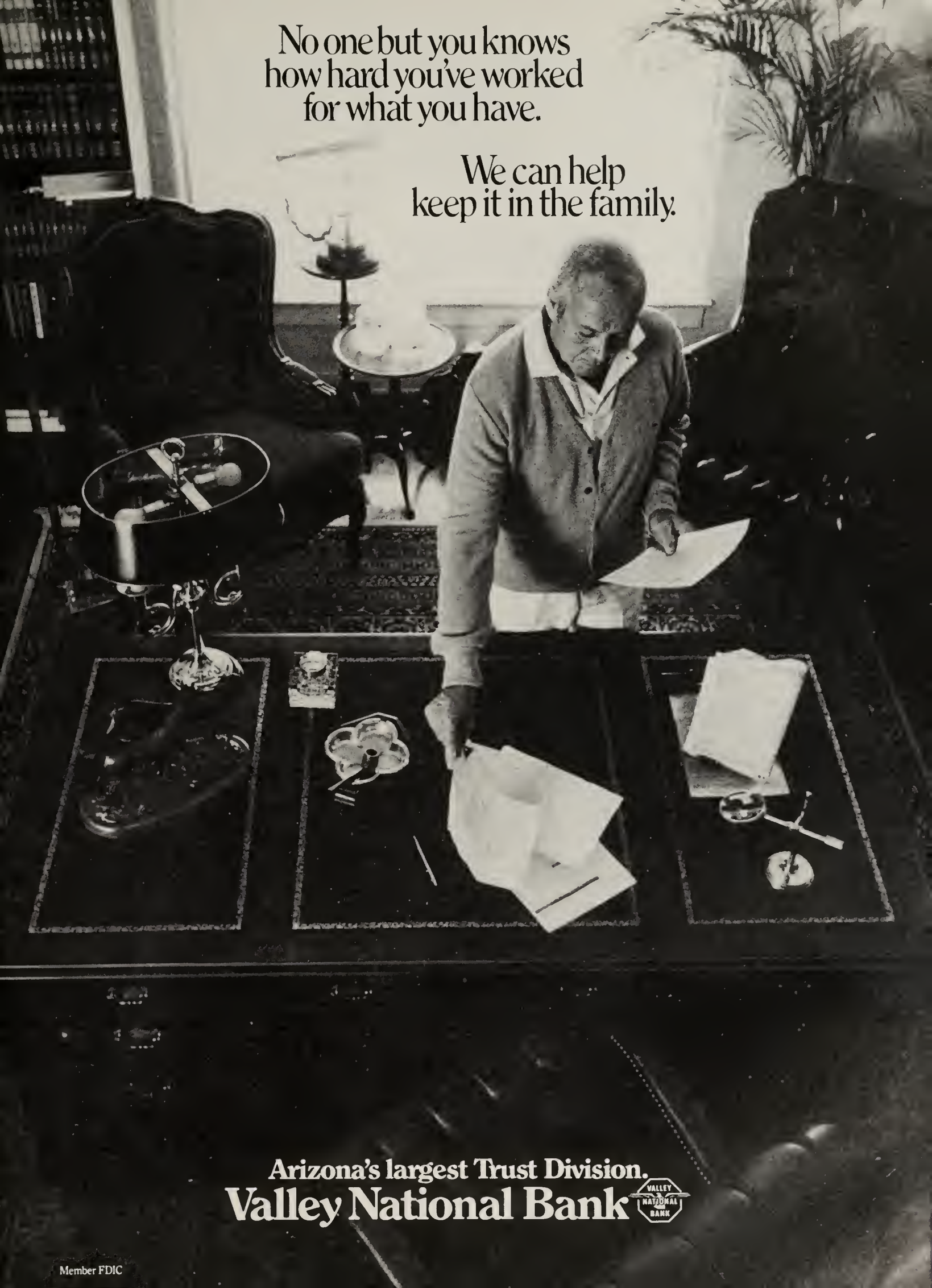
OTHER MODES OF ADMINISTRATION: Intrathecal. Administration of the undiluted injectable solution of MONISTAT i.v. by the various intrathecal routes (20 mg per dose) is indicated as an adjunct to intravenous treatment in fungal meningitis. Succeeding intrathecal injections may be alternated between lumbar, cervical, and cisternal punctures every 3 to 7 days. Bladder instillation of 200 mg of diluted solution is indicated in the treatment of mycoses of the urinary bladder.

HOW SUPPLIED: MONISTAT i.v. is supplied in 20 ml ampoules.

MONISTAT i.v. (miconazole) is an original product of Janssen Pharmaceutica N.V., Belgium.

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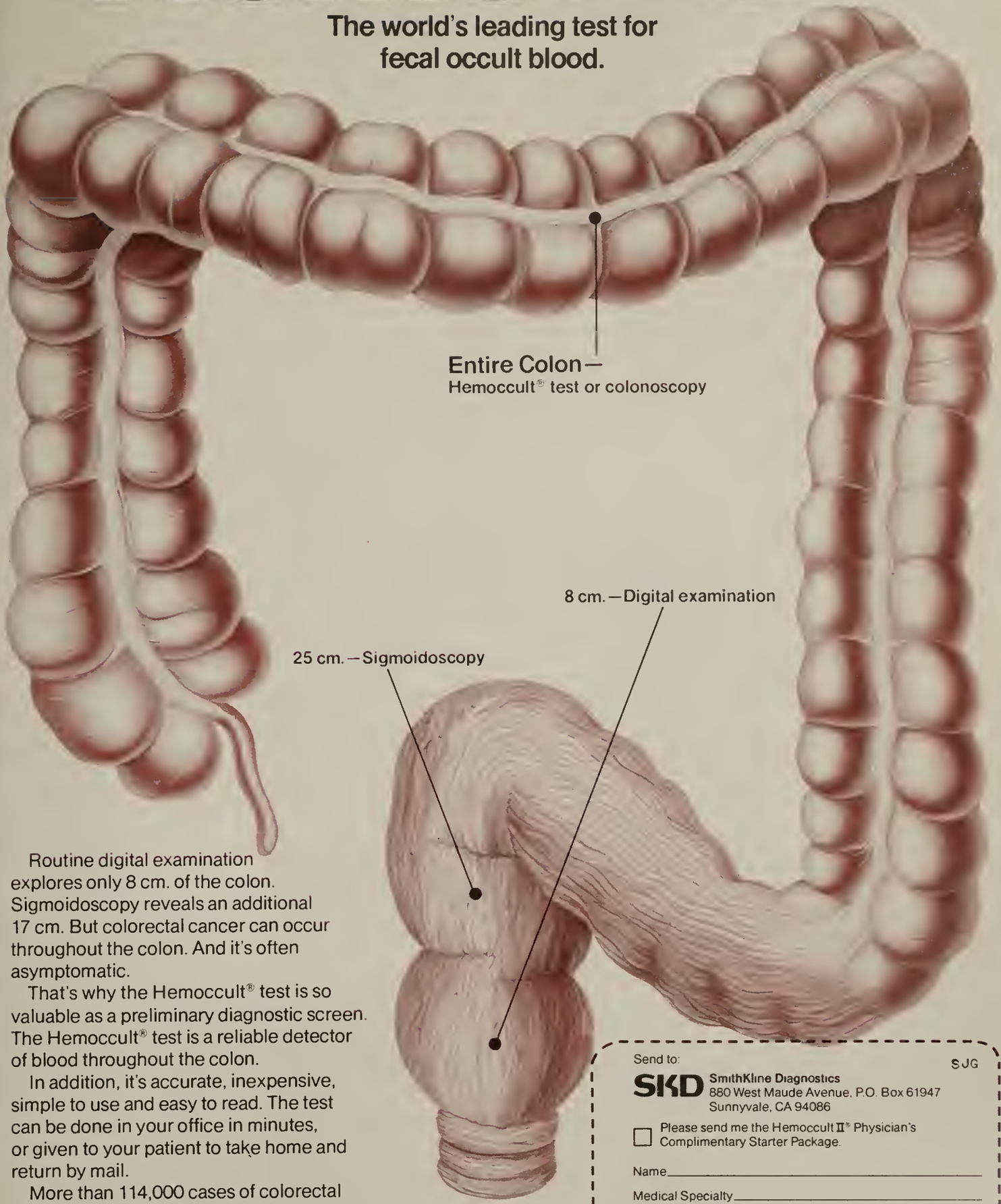
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...in the functional bowel/irritable bowel syndrome*

Bentyl®

(dicyclomine hydrochloride USP)

10 mg. capsules, 20 mg. tablets,
10 mg./5 ml. syrup, 10 mg./ml. injection

helps control abnormal motor activity
with minimal anticholinergic side effects†

Demonstrated smooth muscle relaxant activity.

In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

*This drug has been classified "probably" effective in treating functional bowel/irritable bowel syndrome.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:
King, J.C. and Starkman, N.M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964.

Merrell

8-4420 (Y736A) MNR-804

Bentyl®

(dicyclomine hydrochloride USP)

Capsules, Tablets, Syrup, Injection

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATIONS

Based on a review of this drug by the National Academy of Sciences–National Research Council and/or other information, FDA has classified the following indications as "probably" effective

For the treatment of functional bowel/irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: Autonomic neuropathy. Hepatic or renal disease. Ulcerative colitis. Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon. Hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension. Hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.

Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention, blurred vision and tachycardia; palpitations; mydriasis; cycloplegia; increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness; insomnia, nausea; vomiting; impotence; suppression of lactation, constipation, bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.

Usual Dosage. Bentyl 10 mg. capsule and syrup: *Adults*. 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children* 1 capsule or teaspoonful syrup three or four times daily. *Infants* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg.: *Adults*. 1 tablet three or four times daily. Bentyl Injection: *Adults* 2 ml. (20 mg.) every four to six hours intramuscularly only. NOT FOR INTRAVENOUS USE. MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.

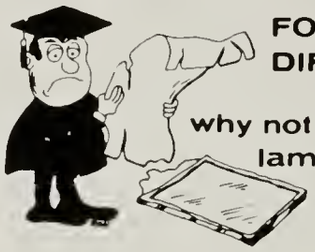
Product Information as of October, 1978

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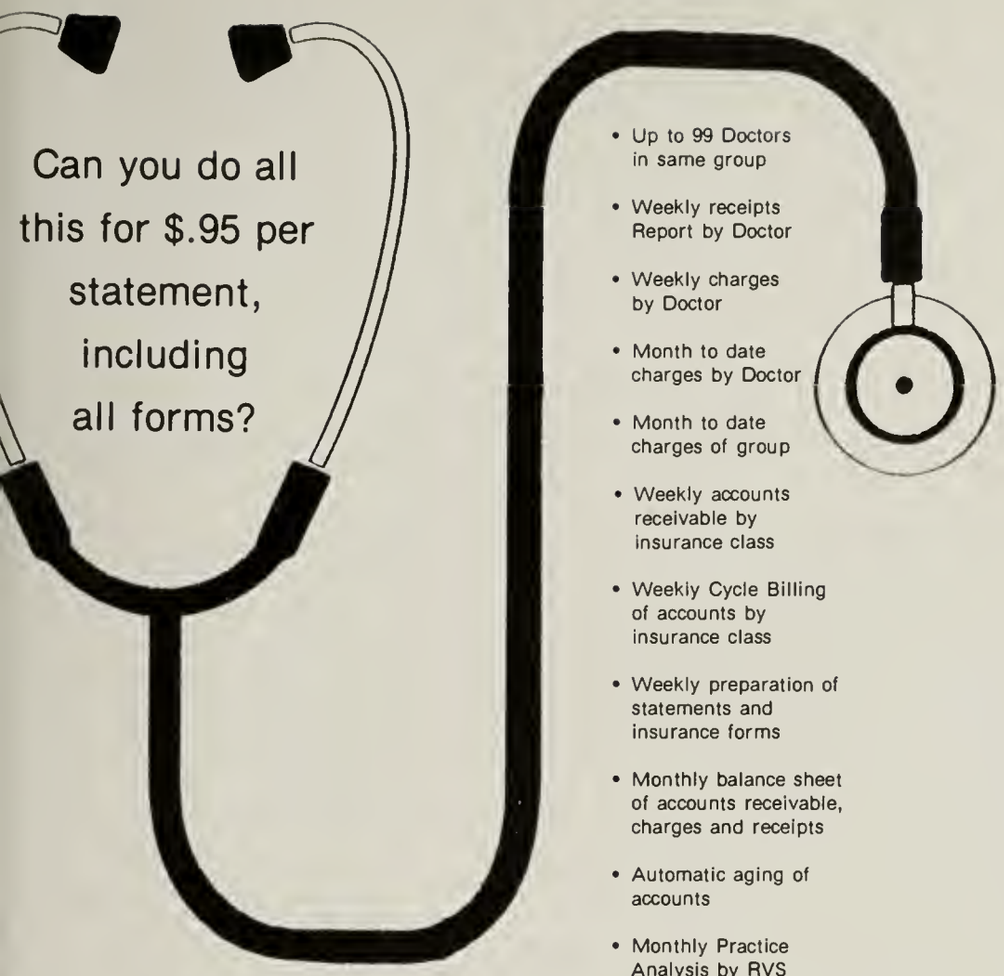
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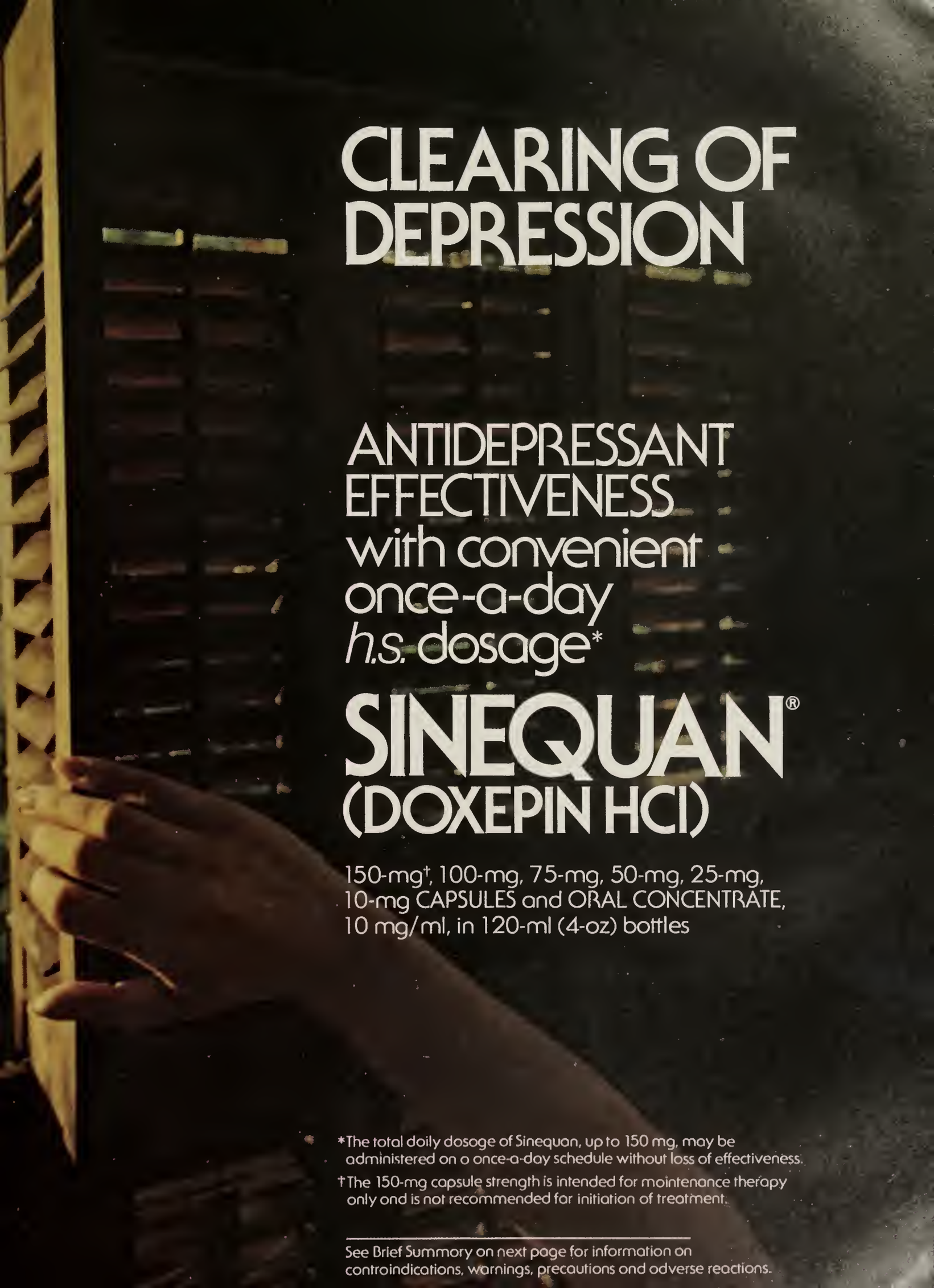
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*The total daily dosage of Sinequan, up to 150 mg, may be administered on a once-a-day schedule without loss of effectiveness.
†The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.
See Brief Summary on next page for information on contraindications, warnings, precautions and adverse reactions.

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CONVENIENT ONCE-A-DAY *h.s.* DOSAGE

which may improve patient compliance. The total daily dosage, up to 150 mg per day, may be given on a once-a-day schedule without loss of effectiveness. Sinequan may also be given on a divided dosage schedule, up to 300 mg per day.

PROMINENT SEDATIVE EFFECT

which may help to relieve the difficulty in falling and staying asleep, and the early-morning awakening often associated with depression.

ESTABLISHED ANTIANXIETY ACTIVITY

to help alleviate the anxiety which often accompanies clinical depression.

USUALLY WELL TOLERATED

At doses up to 150 mg per day, Sinequan does not generally affect the antihypertensive activity of guanethidine and related compounds. Tachycardia and hypotension have been reported occasionally. Drowsiness is the most commonly observed side effect. Dry mouth, blurred vision, constipation and urinary retention have been reported.

EXTENDED RANGE OF DOSAGE STRENGTHS

for flexibility in individualizing therapy.

BRIEF SUMMARY
SINEQUAN® (doxepin HCl) Capsules/Oral Concentrate

Contraindications. Contraindicated in individuals who have shown hypersensitivity to the drug, and in patients with glaucoma or a tendency to urinary retention. These disorders should be ruled out, particularly in older patients. Possibility of cross sensitivity with other dibenzoxepines should be kept in mind.

Warnings. The once-a-day dosage regimen of SINEQUAN (doxepin HCl) in patients with intercurrent illness or patients taking other medications should be carefully adjusted. This is especially important in patients receiving other medications with anticholinergic effects.

Usage in Geriatrics: The use of SINEQUAN on a once-a-day dosage regimen in geriatric patients should be adjusted carefully based on the patient's condition.

Usage in Pregnancy: Reproduction studies performed in animals have shown no evidence of harm to the animal fetus. Since there is no experience in pregnant women receiving this drug, safety in pregnancy has not been established. There are no data with respect to the secretion of the drug in human milk and its effect on the nursing infant.

Usage in Children: Usage in children under 12 years of age is not recommended because safe conditions for its use have not been established.

MAO Inhibitors: Serious side effects and even death have been reported following the concomitant use of certain drugs with MAO inhibitors. Therefore, MAO inhibitors should be discontinued at least two weeks prior to the cautious initiation of therapy with this drug. The exact length of time may vary and is dependent upon the particular MAO inhibitor being used, the length of time it has been administered and the dosage involved.

Usage with Alcohol: It should be borne in mind that alcohol ingestion may increase the danger inherent in any intentional or unintentional SINEQUAN overdosage. This is especially important in patients who may use alcohol excessively.

Precautions. Since drowsiness may occur with the use of this drug, patients should be warned of that possibility and cautioned against driving a car or operating dangerous machinery while taking this drug.

Patients should also be cautioned that their response to alcohol may be potentiated.

Since suicide is an inherent risk in any depressed patient, and may remain so until significant improvement has occurred, patients should be closely supervised during the early course of therapy. Prescriptions should be written for the smallest feasible amount.

Should increased symptoms of psychosis or shift to manic symptomatology occur, it may be necessary to reduce dosage or add a major tranquilizer to the dosage regimen.

Adverse Reactions. NOTE: Some of the adverse reactions noted below have not been specifically reported with SINEQUAN use. However, due to the close pharmacological similarities among the tricyclics, the reactions should be considered when prescribing SINEQUAN.

Anticholinergic Effects. Dry mouth, blurred vision, constipation, and urinary retention have been reported. If they do not subside with continued therapy, or become severe, it may be necessary to reduce the dosage.

Central Nervous System Effects. Drowsiness is the most commonly noticed side effect. This tends to disappear as therapy is continued. Other infrequently reported CNS side effects are confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, and extrapyramidal symptoms and seizures.

Cardiovascular. Cardiovascular effects including hypotension and tachycardia have been reported occasionally.

Allergic. Skin rash, edema, photosensitization, and pruritus have occasionally occurred.

Hematologic. Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura.

Gastrointestinal. Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, and aphthous stomatitis have been reported. (See anticholinergic effects.)

Endocrine. Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels have been reported with tricyclic administration.

Other. Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, and headache have been occasionally observed as adverse effects.

Dosage and Administration. For most patients with illness of mild to moderate severity, a starting daily dose of 75 mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75 mg/day to 150 mg/day.

In more severely ill patients higher doses may be required with subsequent gradual increase to 300 mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300 mg/day.

In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25-50 mg/day.

The total daily dosage of SINEQUAN (doxepin HCl) may be given on a divided or once-a-day dosage schedule. If the once-a-day schedule is employed the maximum recommended dose is 150 mg/day. This dose may be given at bedtime. **The 150 mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Antianxiety effect is apparent before the antidepressant effect. Optimal antidepressant effect may not be evident for two to three weeks.

Overdosage.

A. Signs and Symptoms

1. Mild: Drowsiness, stupor, blurred vision, excessive dryness of mouth.

2. Severe: Respiratory depression, hypotension, coma, convulsions, cardiac arrhythmias and tachycardias.

Also, urinary retention (bladder atony), decreased gastrointestinal motility (paralytic ileus), hyperthermia (or hypothermia), hypertension, dilated pupils, hyperactive reflexes.

B. Management and Treatment

1. Mild: Observation and supportive therapy is all that is usually necessary.

2. Severe: Medical management of severe SINEQUAN overdosage consists of aggressive supportive therapy. If the patient is conscious, gastric lavage, with appropriate precautions to prevent pulmonary aspiration, should be performed even though SINEQUAN is rapidly absorbed. The use of activated charcoal has been recommended, as has been continuous gastric lavage with saline for 24 hours or more. An adequate airway should be established in comatose patients and assisted ventilation used if necessary. EKG monitoring may be required for several days, since relapse after apparent recovery has been reported. Arrhythmias should be treated with the appropriate antiarrhythmic agent. It has been reported that many of the cardiovascular and CNS symptoms of tricyclic antidepressant poisoning in adults may be reversed by the slow intravenous administration of 1 mg to 3 mg of physostigmine salicylate. Because physostigmine is rapidly metabolized, the dosage should be repeated as required. Convulsions may respond to standard anticonvulsant therapy; however, barbiturates may potentiate any respiratory depression. Dialysis and forced diuresis generally are not of value in the management of overdosage due to high tissue and protein binding of SINEQUAN.

Supply. SINEQUAN is available as capsules containing doxepin HCl equivalent to: 10 mg, 75 mg, and 100 mg doxepin: bottles of 100, 1000, and unit-dose packages of 100 (10 x 10's). 25 mg and 50 mg doxepin: bottles of 100, 1000, 5000, and unit-dose packages of 100 (10 x 10's). 150 mg doxepin: bottles of 50, 500, and unit-dose packages of 100 (10 x 10's). SINEQUAN Oral Concentrate (10 mg/ml) is available in 120 ml bottles with an accompanying dropper calibrated at 5 mg, 10 mg, 15 mg, 20 mg, and 25 mg. Each ml contains doxepin HCl equivalent to 10 mg doxepin. Just prior to administration, SINEQUAN Oral Concentrate should be diluted with approximately 120 ml of water, whole or skimmed milk, or orange, grapefruit, tomato, prune or pineapple juice. SINEQUAN Oral Concentrate is not physically compatible with a number of carbonated beverages. For those patients requiring antidepressant therapy who are on methadone maintenance, SINEQUAN Oral Concentrate and methadone syrup can be mixed together with Gatorade®, lemonade, orange juice, sugar water, Tang®, or water; but not with grape juice. Preparation and storage of bulk dilutions is not recommended.

More detailed professional information available on request

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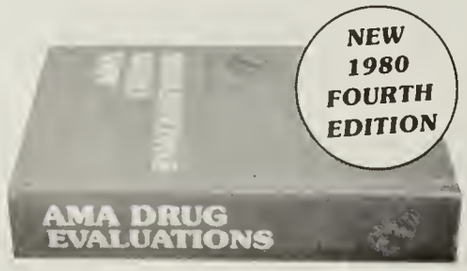
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Tenuate®
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION

Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect, rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence*: Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy*: Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children*: Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular*: Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System*: Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal*: Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic*: Urticaria, rash, ecchymosis, erythema. *Endocrine*: Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System*: Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous*: A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in midevening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633

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References: 1. Citations available on request from Medical Research Department, MERRELL-NATIONAL LABORATORIES, Cincinnati Ohio 45215. 2. Hoekenga, M.T., D'Dillon [Dillon], R.H., and Leyland H.M.: A comprehensive review of diethylpropion hydrochloride. In Central Mechanisms of Anorectic Drugs, S. Garattini and R. Samanin Ed., New York, Raven Press, 1978, pp. 391-404

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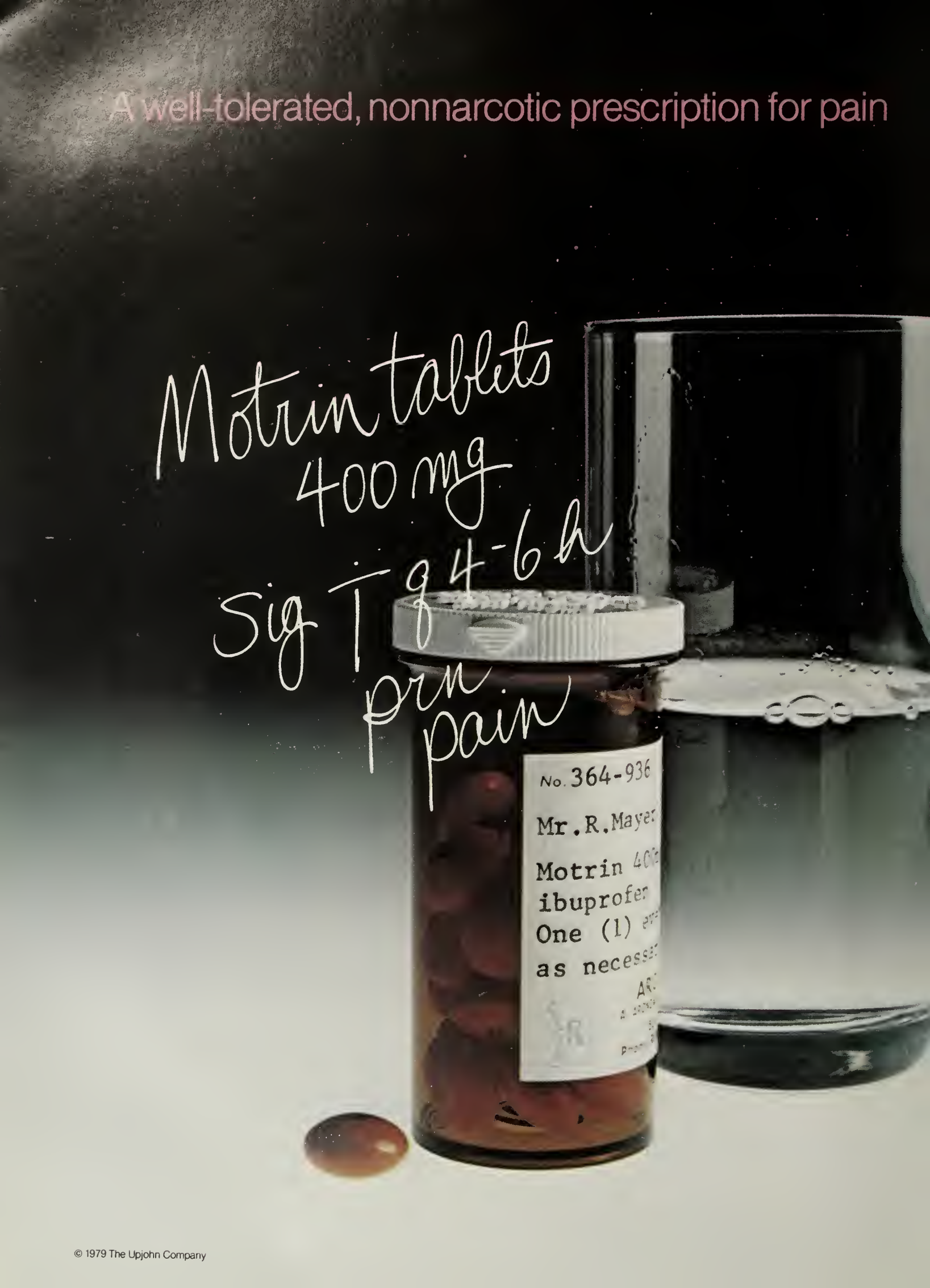
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Motrin 400 mg provided greater relief of pain than did propoxyphene 65 mg in controlled clinical pain studies.

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Mean relief-of-pain scores* (No. patients reporting)	Motrin 400 mg ibuprofen	.89 (108)	1.25 (108)	1.36 (108)	1.28 (107)	1.19 (106)
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Statistical significance		$p<0.02$	$p<0.01$	$p<0.05$	$p<0.02$	$p<0.002$

*0 = No relief 1 = Partial relief 2 = Complete relief

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Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin:* used concomitantly may decrease Motrin blood levels. *Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,* headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400 or 600 mg t.i.d. or q.i.d.
Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

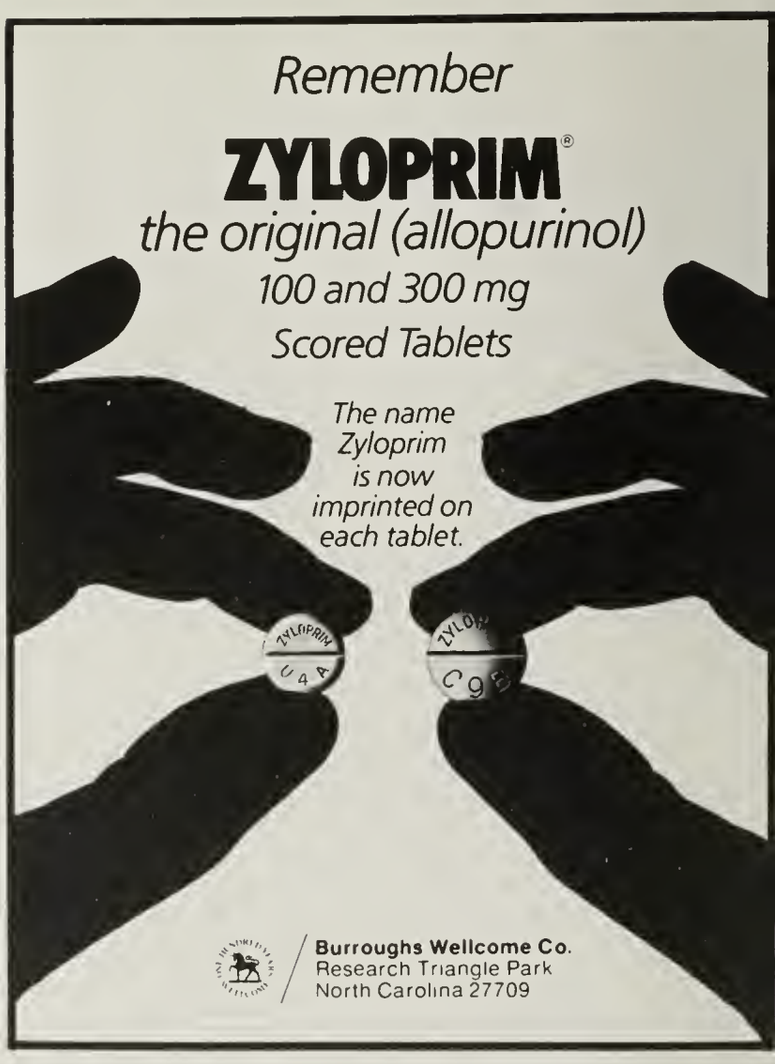
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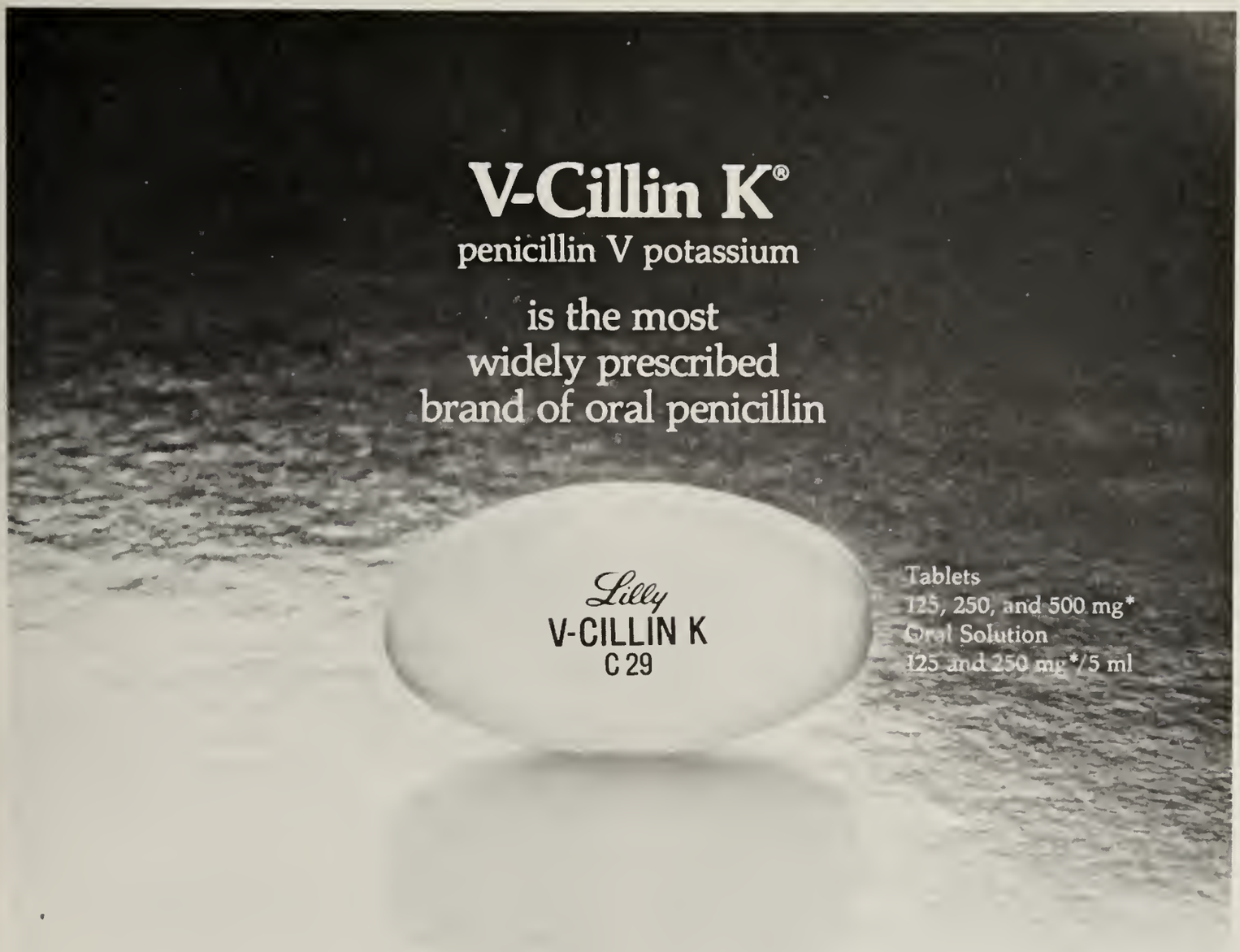
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V-Cillin K*
penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin. [102175]

***Equivalent to penicillin V.**

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Cardiology

AV Sequential and Atrial Pacemakers
(Special Indications)

Dietmar Gann, M.D.
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Editor:
Kenneth B. Desser, M.D.

Introduction

Studies done over fifteen years ago clearly demonstrated the advantage of pacing from the atrium over pacing from the ventricle. Loss of the atrial contribution to ventricular filling (the "atrial kick") could reduce the cardiac output by more than twenty percent.[1] The more dilated or hypertrophied the ventricle is the more important atrial contribution to the cardiac output becomes. Atrial and atrioventricular (AV) sequential pacing has, however, until now, been rarely utilized. Technical difficulties in the insertion of atrial pacemaker electrodes and a high displacement rate have prevented a wider use. A reliable and lasting power generator for permanent AV sequential pacing was also not available. Development of specifically designed and formed atrial pacemaker electrodes have made atrial pacing a fairly reliable and easy mode of pacing in the last few years, justifying the use of atrial pacing in selected patients. New AV sequential power generators are presently marketed by several pacemaker companies and in clinical trials have so far performed well. The atrial lead is a special preformed J-Lead with plastic tines that are positioned in the appendix of the right atrium (Figure 1). The tines of the lead get embedded in the trabecula of the atrial appendix producing a stable

From: Tucson Medical Center, Department of Medicine, Division of Cardiology, Tucson, AZ. Reprint requests to Dr. Gann, 5402 E. Grant, Ste. 1-B, Tucson, AZ 85712.



Figure 1
Preshaped atrial J-Lead with plastic tines

fixation of the electrodes. Displacement of this lead, if properly positioned, is rare. Of 64 patients with atrial leads followed by one of the authors (Dietmar Gann, M.D.), only two leads became displaced in the early postoperative period and were successfully repositioned with the second attempt. Similar results have been reported in the literature.[2,3] Atrial pacing can be used in patients with intact atrioventricular conduction. Atrioventricular conduction problems can be overcome with the use of AV sequential pacemakers. Two electrodes are implanted in the patient, one in the atrium and one in the ventricle (Figure 2). Both are connected to one power pack. The atrium is paced first and then after a preset interval the ventricle is paced (Figure 3). The pacemaker is a demand type pacemaker and therefore the patient's own rhythm can suppress the pacemaker activity.

We report our recent experience with a selective group of patients in whom atrial or AV sequential pacing was clearly superior to the conventional mode of ventricular demand pacing.

Patient one: A 57-year-old man with arteriosclerotic heart disease and recurrent severe congestive heart failure developed intermittent periods of sinus bradycardia with rates as slow as thirty per minute, unrelated to medications. The ejection fraction, measured by nuclear cardiac scan, was severely reduced to eighteen percent (normal greater than sixty-five percent). On a temporary basis, the patient was paced at varying rates, first from the atrium and then from the ventricle. With the aid of a thermodilution Swan-Ganz catheter, cardiac output and pressures in the pulmonary artery and right atrium were measured. Pacing at a rate of seventy showed the following differences between atrial and ventricular pacing (Table 1).

Atrial pacing proved to be clearly superior to



Figure 2
Over penetrated chest x-ray showing an AV Sequential pacemaker with two leads, one lead with the tip at the apex of the right ventricle and the other curved lead in the atrial appendix.

ventricular pacing. At a rate of seventy, atrial pacing improved cardiac output by thirty-three percent compared to ventricular pacing at a similar rate. Systemic resistance decreased and the blood pressure rose. The patient was permanently paced from the atrium and over an eight month follow-up period required no further hospitalizations. Before, he was admitted four times in five months for congestive heart failure. His heart size, as determined with regular chest x-rays, decreased from a transverse diameter of 19 cm to 17 cm.

Patient Two: A 62-year-old man suffered severe angina after an extensive anterior wall myocardial infarction. He underwent a coronary artery bypass to the right coronary artery and one marginal artery and aneurysmectomy of an apical aneurysm of the left ventricle. Postoperatively, the patient developed recurrent bouts of ventricular tachycardia, uncontrollable with drug therapy (Figure 4). A temporary pacemaker was inserted in the coronary sinus allowing pacing from the atrium. Only pacing rates of 110 per minute or greater could control the ventricular arrhythmias. The patient received a permanent AV sequential pacemaker with a pacing rate of 110 per minute and no further ventricular arrhythmias occurred. Two months after pacemaker

Table 1

	Cardiac Output (L/Min)	Systemic Resistance (Dyne Sec cm-5)	Systemic Pressure (mm/HG)
Atrial Pacing (Rate 70)	3.6	1460	110/65
Ventricular Pacing (Rate 70)	2.7	1920	95/70

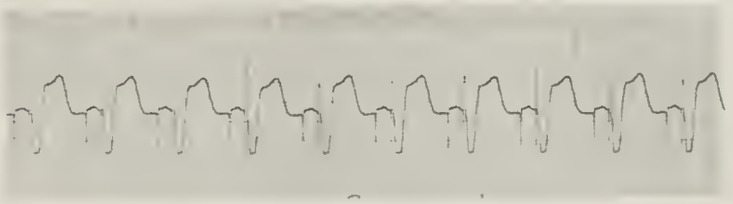


Figure 3
Rhythm strip from a patient with an AV Sequential pacemaker

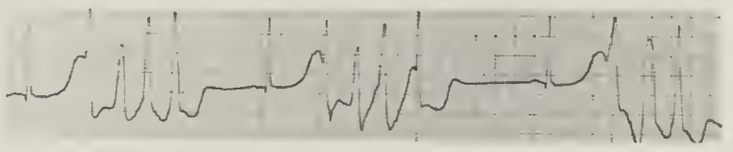


Figure 4
Patient number two with recurrent bouts of ventricular tachycardia before pacemaker implantation.



Figure 5
Same patient as in Figure 4; Initial part shows AV sequential pacing at a rate of 110. After reprogramming to a rate of 70, ventricular premature beats appear immediately.

implantation, the rate of the pacemaker was temporarily reprogrammed to seventy and immediately the patient developed ventricular premature beats, indicating that marked ventricular irritability persisted and was continuously suppressed with the AV sequential pacing (Figure 5).

Patient Three: A 74-year-old man with severe congestive cardiomyopathy experienced recurrent syncopal attacks. One was documented to be due to ventricular tachycardia. The patient was intolerant to Pronestyl and allergic to Quinidine. Dilantin had no effect on the ventricular premature beats. AV sequential pacing at a rate of eighty per minute suppressed all ventricular ectopic beats and the patient was free of syncopal attacks after a five month follow-up period.

Patient Four: An 84-year-old man with a sick sinus syndrome received a permanent ventricular demand pacemaker and was paced at a rate of seventy per minute. Post pacemaker implantation, he became hypotensive with an upright blood pressure of 70 systolic, resulting in fainting episodes. During these

episodes, the patient was continuously pacing at a rate of seventy. There was retrograde activation of the atrium from the ventricle, producing cannon waves in the jugular pulse. A trial with temporary atrial pacing at a rate of seventy-five per minute suppressed the ventricular pacemaker activity. The blood pressure, even in the upright position, remained at 95 mm/HG or higher and the patient became asymptomatic. The patient remained well over a four day trial with temporary pacing and then received a permanent atrial pacemaker. Over a follow-up period of eight months he is doing well.

Comment

Ventricular demand pacing has proven its effectiveness in the last fifteen years. The majority of the patients tolerate and benefit from this mode of pacing. A small group of patients exist, however, in whom ventricular pacing is not the optimal therapy. The above-described patients were representative of a selected group of patients who will benefit from atrial or AV sequential pacing.

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Seminars in Gastroenterology and Liver Disease

Recurrent Abdominal Pain In Children

Stephen Glouberman, M.D.

Editors:
George Burdick, M.D.
Stephen Glouberman, M.D.
Leon Rigberg, M.D.

Abdominal symptomatology is common in the pediatric age group. The causes are numerous and include various disorders of the gastrointestinal, genitourinary, respiratory, and cardiovascular systems. Intra-abdominal congenital defects, intussception, Meckel's diverticulum, and milk and food intolerance[1] are conditions which must be considered more frequently in this age group than in adults. When the diagnosis is made and appropriate therapy instituted, the child is usually returned to his previous state of good health.

In a number of children, no obvious cause is found after a history and physical examination, standard blood and urine tests, and X-rays are performed. The symptoms in this group may be prolonged, can be intermittent, and result in time lost from school, and concern in the family setting. These children are said to have recurrent abdominal pain (RAP), and their workup and treatment are a challenge to physician and family.

From: 3411 North 5th Ave., Phoenix, AZ 85013.

It is estimated that up to 10-20% of a general pediatric population suffer from RAP. The age of onset is usually around age 9 in boys, whereas 50% of girls have the onset of their symptoms between 8 and 10.[2] It occurs slightly more frequently in girls and the onset is unusual before age 5 years.[3] The pain may be intermittent with symptom free intervals of varying length, or may be continuous and, at times, marked by severe exacerbations. In over half the patients, the pain is periumbilical in location, being in the epigastrium or upper abdomen, and lower abdomen in a lesser percentage. The pain can be described as dull, cramping or sharp, or as a fullness. In over 50% it occurs more than once a week, and in 16% daily.[2] Pain may have been present for weeks or even years before medical attention is sought.

There is no consistent relationship to eating, the type of food eaten, bowel movements, activities, time of day, use of medications, or the patient's position. A small percentage are awakened from sleep with pain. There are often associated complaints of headache, nausea, vomiting, fatigue, pallor, dizziness, diarrhea or constipation and arthralgias. Weight loss occurs in only a few patients. Onset or exacerbation of symptoms may be associated with school events, social activities, periods of excitement, illness in other family members, unrest at home, punishment, or change in residence or school. A preceeding illness is present in 20% of patients.[2]

The past medical history may reveal that the mother had had a complicated pregnancy or difficult labor, or that as a child, the patient had suffered from respiratory distress or colic. Toilet training may have been difficult, enuresis may have been a problem, and recurrent nightmares have been present.

Forty-four percent are the youngest child in the family.[2] Allergies or migraine headaches, and abdominal symptoms are common in parents of children with RAP. Marital discord is present in 40% of the parents.[2]

Sporadic school absenteeism occurs in aobut 60% of children with RAP.[2] Physical education is the subject most commonly associated with abdominal symptoms.

Physical Examination

Apart from the abdominal examination, the physical findings are usually normal. The abdomen may be variably tender, and is usually so in the lower abdomen, and this does not correlate well with where the patient reports the pain is located. No masses are felt. There is usually no bloating and bowel sounds are normal. Growth and development are usually normal.

Diagnostic Tests

Routine blood work, urinalysis, stool examination and upper gastrointestinal series, gallbladder X-rays and barium enemas are normal. About 30% of RAP patients are found to be lactose intolerant and most remain symptom free on a lactose free diet.[4] A lactose tolerance test, or a trial of a lactose free diet, should be done in patients with RAP because of its high yield.

Recently upper intestinal endoscopy has been applied to the pediatric age group. In twenty-five percent lesions have been found that were not seen by X-ray, and in 15% gastric or duodenal ulcers are found which are not present on the UGI series.[5] Furthermore, when ulcers are present they are found almost twice as often by endoscopy than by X-ray.[6] Therefore, more judicious use of this diagnostic modality may improve the diagnostic yield in the RAP patient.

Psychological Factors

A large percentage of patients with RAP remain in whom no organic disease is found. They may be obsessive superachievers, or come from families where there is parental oversubmissiveness and the child is impulsive, demanding and immature. Parents may be neglectful of the child, or excessively punitive. The child is overly dependent on the parent and given little responsibility. It is felt that these children suffer from a psychosocial cause for their RAP.

The RAP may be associated with parental marital discord, death of a parent or grandparent, or separation of a parent or other loved one. The pain may be an unconscious attempt by the child to achieve parental concern. The pain can also be sympathetic, in that parents may be experiencing similar symptoms at the same time.

Parents may not be willing to accept an emotional cause for their child's pain. They see the child suffering with their symptoms and may not want to believe that an abdominal pain is not organic in orgin.

Treatment

If an organic cause is found, such as lactose intolerance or ulcer disease, then specific therapy is indicated. In those patients in whom no organic disease is present, it has been fond that discussion with the child and parents, separately and together, may lead to a better understanding of the underlying difficulties. This usually requires repeated conferences. The physician must show compassion and understanding. It is wise to point out that the patient's pain is real, and to not use the term "emotional" too early in the discussion.[7] With deliberate skill, the underlying problem can be brought to the surface, and a mechanism worked out for resolving the stressful situation. This may involve an altered school or social situation, a change in parent's attitude toward the child, or even a temporary change in the child's residence. Psychiatric referral may be appropriate.

Hospitalization at times is necessary and can reveal the nature of the problem more clearly. In one series, this revealed that children with RAP showed obvious attempts to please adults and obtain approval. They were found to be strikingly sensitive and insecure, with considerable concern about their parents' illnesses and happiness. While in the hospital receiving "TLC", there was a 90% improvement.[8] Dietary changes and the use of medications were not recommended for patients with long standing symptoms as these were often not helpful, and stood in the way of a supportive relationship

between family and child.

Prognosis

In general, the prognosis for RAP is good. Seventy-five to 80 percent resolve either quickly or later following appropriate analysis by the physician of the problem with recommendations for improvement. About 20% need to be referred for psychiatric evaluation. Adolescents with RAP are more likely to have deeper emotional problems, and some are borderline psychotic or frankly psychotic.[7]

Of patients who do not resolve readily, some will ultimately undergo surgery, and most of these improve. Some of the findings at surgery are adhesions and ovarian cysts, and improvement follows the operation. In others, improvement following operations where no abnormalities are noted, are believed to be due to the "placebo effect."[9] Long term followup, in one series, revealed that 3 of 161 developed Crohn's disease, not recognized earlier, and one anorexia nervosa.[9]

When RAP patients were followed up 25 - 30 years later, over 50% had some abdominal symptomatology. Most had symptoms of the irritable bowel syndrome, and a few developed ulcer disease. Headaches, migraine syndrome, back pains and "bad nerves" were more prevalent than in controls.[10] Children of parents who had RAP did not have RAP more frequently than controls, but if they did have RAP, they would be more likely to have abdominal symptoms if their parents had abdominal complaints at the same time.[10]

Thus, it would appear that although the short term prognosis in RAP is excellent and very few significant diagnoses are missed by a nonexhaustive diagnostic workup, in the long term, many patients with RAP will have medical problems of a chronic nature. Many of these appear to occur in individuals who are subject to great stresses of varying kind, and cannot adjust well to these stresses. Since the illnesses seem to stem from problems originating in childhood, not enough can be said about the importance of a happy and secure childhood to result in a stable adulthood.

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Nutrition

Dietary Management in Diabetes Mellitus

C. A. Nugent, M.D.

With this issue we initiate a series of articles in an area of increasing visibility and concern to both consumers and providers of health care — nutrition. We hope the articles will spark interest and prove useful to the readership of *Arizona Medicine*. Articles are planned on a range of topics including vegetarian diets, fetal malnutrition, special dietary needs of athletes, geriatric nutrition, and various other subjects. We welcome comments and suggestions for future topics.

Editors:
Gail G. Harrison, Ph.D.
David L. Earnest, M.D.

Non-Insulin Dependent Patients

The vast majority of diabetic patients have non-insulin dependent diabetes mellitus. They are usually asymptomatic, obese adults, and are not ketosis-prone. This form of diabetes would be uncommon in this country if we were physically active, ate less food and were not obese.[1]

1. Obesity

Obesity is often judged by comparing a patient's weight and height with the data in the Desirable Weight Table of the Metropolitan Life Insurance Company.[2] However, unless patients have unusually well developed muscles, it would be better to regard these tables as

From: University of Arizona Health Sciences Center, Section of Endocrinology, Deparment of Medicine, Tucson, AZ, and Tucson VA Hospital. Dr. Nugent is a Professor of Medicine.

providing overestimates for desirable weights.[3,4] Even in slightly obese patients, weight reduction is every effective in restoring insulin sensitivity toward normal as well as increasing insulin secretion.[3,5,6] Furthermore, obese diabetic patients need not reduce body weight to normal in order to improve glucose tolerance.[3]

2. Current Management Practices

Treatment of non-insulin dependent diabetics with insulin can lower blood sugar and free patients of acute hyperglycemic symptoms. However, there is no convincing evidence that treatment with insulin, in contrast to placebo, lowers the mortality or complication rate.[7-10] Goldbert, et al[11] in a survey of their clinic, concluded that they frequently substituted treatment with potentially harmful drugs (oral hyoglycemic agents) for physiological treatment (correcting obesity). Furthermore, they tended to ignore the correction of factors, such as hypertension and hyperlipidemia, that may be more important than hyperglycemia in the development of complications including death. This critical analysis of the deficiencies of their management of diabetic patients could probably be applied to many practices.[11] Most physicians are not skillful in dietary management.[12]

3. Effective Techniques

There are physicians who do know how to use dietary management successfully to get rid of diabetes in non-insulin dependent diabetics.[13-16] Davidson's[15] successful approach has been modified for use in our hospitals. Obese diabetics with no prior episodes of ketoacidosis and who do not have moderate or large amounts of ketones in their urine when glycosuric are candidates. The patients is hospitalized for five days. Oral hypoglycemic agents and insulin are stopped the day of admission. For the first three days the patient is starved. Urine tests for sugar and ketones are done on double voided urines t.i.d. a.c. and h.s. Within two or three days after admission 95% of our patients become aglycosuric. Ketonuria usually develops by the second or third day. If moderate or large amounts of ketones appear in the urine while the starving patient is still glycosuric, the patient needs prompt treatment with insulin and starvation should be halted. After three days of starvation we make a radical change in the nature of the patient's usual diet. On the fourth hospital day the patient is given a calorically restricted vegan diet (not only no meat, milk, or eggs but also no bread, potatoes, rice, nuts, seeds, pasta or any baked goods) and no more than one cup of cooked beans per day (mean intake less than 1,000 calories per day). Following discharge they are seen every week or two and urged to stay on this nutritionally inadequate diet for a 2 month period before gradual introduction of nuts, seeds, potatoes, rice and wheat and minimal amounts of meat, milk, and eggs.[17] The diet for long term maintenance should be nutritionally adequate except for deficient calories until the patient attains a normal weight.

4. Alternatives

If it is not possible to eliminate hyperglycemia in these patients, it may be possible to minimize it or decrease the incidence of diabetic complications by continued caloric restriction in obese patients and by a) increasing the proportion of carbohydrates, b) increasing fiber content, c) decreasing saturated fat and cholesterol and d) decreasing sodium.

a. Increase the proportion of carbohydrates in the diet

Increasing the proportion of carbohydrates, without changing calories, tends to improve glucose tolerance in non-insulin dependent diabetics.[18]

b. High-carbohydrate, high-fiber diets

Dietary fiber is the residue from plant foods resistent to hydrolysis by human alimentary enzymes.[19] There are numerous reports on the decreased hyperglycemia and decreased requirements for insulin and oral hypoglycemic agents in diabetics given increased fiber.[20-24] One way to increase dietary fiber is to urge patients to follow the advice in The Alternative Diet Book[17] *(available for $3.95 from University of Iowa Publications, Order Department, 17 West College Street, Iowa City, Iowa 52242).*

c. Decrease the intake of saturated fat and cholesterol

Coronary heart disease is the most common cause of death in patients with diabetes in Western societies.[25] The serum cholesterol concentration is an important risk factor for coronary heart disease and is responsive to dietary alterations.[26] A practical approach to decreasing the risk of developing coronary artery disease is outlined in the Alternative Diet Book.[17] In this diet, cereals, legumes, vegetables and fruit become the major sources of food while meat, fish and chicken are restricted to 3 - 4 oz (total) per day.

a) Patients with congestive heart failure and/or low cardiac output generally do better with preservation of the atrial "kick." Cardiac output studies with atrial and ventricular pacing may be helpful in deciding which patient may benefit from atrial pacing.

b) Suppression of ventricular arrhythmias, and less so of atrial arrhythmias, can be accomplished with pacing in some patients in whom drug therapy either fails or is not tolerated.[4] Usually, a trial of temporary pacing will establish the mode and rate of pacing suppressing the arrhythmia. In patients in whom fairly rapid rates are necessary, an atrial or AV sequential pacemaker is usually better tolerated. Frequently, patients with recurrent ventricular tachycardia also have congestive heart failure. Again, in this situation, atrial pacing may be superior to ventricular pacing.

c.) Hypotension and low cardiac output has long been a known complication of ventricular pacing.[5] Ventricular pacing was once even suggested as a treatment of hypertension. If patients become symptomatic from the low blood pressure, conversion of a ventricular demand pacemaker to an atrial pacemaker is recommended.

d) Patients with a very hypertrophied ventricle, such

as found in aortic stenosis or idiopathic hypertrophic subaortic stenosis, usually need the atrial "kick" to maintain a good cardiac output and may do better if paced from the atrium.[6]

Should atrial or AV sequential pacing be used depends on the intactness of the AV conduction system. Conduction studies should be performed before an atrial pacemaker is inserted. The incidence of AV conduction problems in patients with disease elsewhere in the conduction system is substantial[7] If conduction studies cannot be performed, an AV sequential pacemaker should preferably be used over an atrial pacemaker.

At present, the major drawback of the AV sequential pacemakers is their size, which is substantially larger than the presently available small vetricular demand pacemaker units. Smaller sized power packs are now being evaluated in clinical studies. Also, the price of the AV sequential pacemaker is higher compared to a regular demand pacemaker.

With improvement in size and price of the AV sequential pacemaker, indications for this type of pacemaker may widen. However, at the present time, it should only be used in selective patients in whom benefits of the AV sequential pacemaker system over the regular ventricular demand system can be demonstrate before pacemaker insertion. Atrial pacemakers, however, do not differ in size or cost from ventricular pacemakers. Their use is probably going to be more widespread in the future. Theoretically, they could be used in all patients with severe sinus bradycardia, sinoatrial block, or sinus pauses (as long as the AV conduction system is intact).

d. Decrease the intake of sodium

Hypertension, a major risk factor for coronary heart disease, is common in patients with diabetes mellitus.[7] The role of excessive sodium intake in the production of hypertension has been reviewed elsewhere.[27,29] It may seem overbearing to urge diabetics to add sodium restriction to the other limitations placed on their daily activities. Such advice might only be given after the physician has reviewed the evidence and discussed it with the patient.

The first step in decreasing sodium intake is to stop adding salt, both in the preparation of food and at the table. It may be reassuring for patients to realize that within a few weeks after they take this step they will begin detecting flavors in foods that they had not realized were there.

The second step, "eat no processed foods," makes one realize how difficult it is to restrict sodium intake. However, any time a choice can be made between eating a processed and a fresh food item, the salt content of the fresh item is likely to be lower than that of the processed food. Specifically, fruits and vegetables, meat, fish and poultry contain less sodium while canned or frozen vegetables, luncheon meats, ham, smoked fish and sausage are likely to contain more sodium.

Insulin Dependent Patients

We do not have space in this article to outline an approach to the dietary management of insulin dependent patients. Two extremely helpful pamphlets are available at local American Diabetes Association offices or at their national office, 600 Fifth Avenue, New York, NY 10020. These are the "Exchange Lists for Meal Planning" ($0.50) and "A Guide for Professionals: The Effective Application of Exchange Lists for Meal Planning" ($1.50). Using these pamphlets a nutritionally adequate, stable, esthetically pleasing diet can be developed for the particular needs of insulin dependent patients.

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For references, readers should write the author. A more detailed discussion of this same topic by the author is included in the chapter "Dietary Management of Patients with Diabetes Mellitus in Therapy" in "Diabetes Mellitus," Edited by Rubin Bressler, PSG Publishing Co., Littleton, Mass (In Press).

Obstetrics and Gynecology

Nutrition An Important Part of Obstetrical Care

Glenn Lippman, M.D.

Editors:
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The association between maternal nutrition and fetal development is well delineated. While it must be realized that nutrition is only one factor involved in a newborn's eventual outcome, animal studies, epidemiological evidence, and clinical evaluations have all correlated the relationship between maternal intake and fetal outcome.

Acute starvation in human populations was demonstrated to cause decreased birthweight during the siege of Leningrad and the Dutch famine of World War II. Recorded birthweights of Leningrad infants born in a reviewed clinic population during the first half of 1942 were approximately 585 grams less than those born during the first half of 1941. Additionally, the stillbirth and neonatal death rate in the early part of 1942 was approximately 3 1/2 times the rate for the following six months. Similar results are provided in reviews of clinical statistics from Rotterdam and The Hague where birth weights below five pounds increased 70% during the period immediately following the severe famine affecting western Holland during the winter of 1944-1945.

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Field surveys in Guatamala and Canada have supported the findings of prenatal supplementation by demonstrating a decrease in the incidence of low birthweight infants. The Montreal program, which provided both nutritional education and supplementation between 1963 and 1972, was associated with lowered prematurity and perinatal mortality. The duration of intervention was positively correlated with increased birthweight. Similar findings were reported in the Guatemalan survey where birthweight reflected caloric intake during pregnancy. The incidence of low birthweight infants in the high supplementation group (>20,000 k cal) was 9% where the low supplement group (<20,000 k cal) was 19% and the mean birthweight for the groups was 3105 grams versus 2994 grams respectively.

It should be noted that there is conflicting data concerning protein and caloric supplementation provided by both a New York and Philadelphia survey. Both reviews showed no effect of intervention on the outcome of pregnancy. It is hypothesized that these results reflect the relatively adequate nutrition of the study populations prior to intervention.

Large scale surveys of maternal populations have demonstrated the positive, but independent variable of prepregnancy weight and prenatal weight gain on infant birthweight. Although prenatal weight gain is not a definitive indicator of nutritional status, it is now recognized that a 28 pound weight gain throughout pregnancy is associated with a lowered incidence of low birthweight infants. This value may vary in view of pregnancy weight. Obese patients with a decreased weight gain may demonstrate a protected status as demonstrated by less than expected occurrence of low birthweight infants despite apparently inadequate weight gain. This has prompted recommendations for an approximate weight gain of twenty pounds for obese patients (50% above standard weight for height). This may provide protection against excessive fat cell accumulation in the infant, a state which may predispose that child to obesity later in life.

It should be noted that poor maternal nutrition may be reflected in parameters other than infant birthweight. Winick et al have demonstrated changes in behavioral and neurological aspects of such children born to mothers with poor nutrition. Malnutrition during brain formation causes decreased numbers of brain cells, insufficient myelination and altered cerebellar development. It is further suggested that intrauterine malnourishment may be reflected in altered perception, attention span, intellectual potential and educational aptitude. Intrauterine growth retardation due to malnutrition also appears to affect the immune system to as great a degree, and with possibly the same permanence, as it affects neurological growth and postnatal functioning.

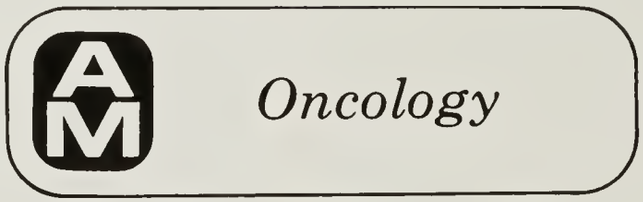
Specific recommendations concerning maternal nutrition have been well elucidated and will be discussed

in a subsequent article. These recommendations should be modified after adequate assessment of each patient's ongoing nutritional status. Evaluation may include estimation of adequate and appropriate weight gain, fundal height changes, sonographic evidence of biparietal diameter change and hematocrit/hemoglobin determination. These methods are of maximum value when screening women with low prepregnancy weight, with previous S.G.A. infants, or with medical conditions affecting intake or metabolism.

Women with apparent food adversion, abnormal food preferences, or economically disadvantaged should possibly be considered at nutritional high risk. Once such a population is identified, routine application of previously mentioned guidelines should be applied in conjunction with adequate nutritional education.

Maternal nutrition must be viewed by the medical practitioner in context with the needs of the developing fetus and the breast feeding infant. While the specter of abject famine may not be familiar to Arizona physicians, it must be remembered that individual dietary habits, fad diets, obesity and increased refinement of intake may all lead to eventual depletion of nutritional status in ways not currently well delineated. This potential adverse effect on a newborn's well-being should be recognized and possibly avoided through more active education and intervention by the physician in the nutritional status of the pregnant patient.

References available upon request.



Renal Cell Carcinoma (Hypernephroma)

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Introduction

Renal cell carcinoma ranks thirteenth in frequency of occurrence among all cancers and kills more than 7000 persons annually.[1] It is two to three times as common in men as in women and primarily affects individuals in the sixth to seventh decade, although it also is commonly seen in younger adults and rarely in children. The tumor was initially described by Grawitz in 1883 and was felt to be of adrenal origin because of its yellow color.[2] Hence, the misnomer "hypernephroma" was coined to describe the tumor we now know to be an adenocarcinoma arising from renal tubular epithelial cells. No specific risk factors have been identified, although there is evidence to suggest that disease incidence may be somewhat higher in cigarette smokers.[3] The disease is of interest to all physicians, since it can be responsible for a variety of systemic signs and symptoms which may be initially encountered by primary physicians or non-urologic specialists. Indeed, 10%-25% of these tumors are asymptomatic and are detected incidentally in the course of evaluation of another clinical problem.

Symptoms and Signs

As noted by other reviewers, in large clinical series, the most common signs and symptoms of renal cell carcinoma are gross or microscopic hematuria (50%-60%), flank pain (40%), or abdominal mass (20%-45%).[4,5] However, the disease may also present with more obscure symptoms which are less obviously attributable to renal pathology. Obstruction of the left renal vein or inferior vena cava by tumor may result in acute varicocele formation. In addition, the tumor may be associated with a variety of paraneoplastic systemic findings, some directly attributable to ectopic hormone production by the neoplastic tissue. Hypercalcemia is frequently encountered (3%), sometimes in association with elevated levels of prostaglandins or a parathormone-like substance. Secondary erythrocytosis may be seen secondary to erythropoietin production.

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Less commonly, gynecomastia, galactorrhea, or intestinal disturbances have been reported secondary to tumor production of gonadotropins, prolactin, or glucagon, respectively. A syndrome of reversible hepatic dysfunction without evidence of hepatic metastases is seen in 3%-5% of cases and is thought to be secondary to an unidentified humoral factor. In addition to the above, unexplained anemia out of proportion to the degree of hematuria, and unexplained fever are seen in 7%-20% of cases.[6] Despite this myriad of clinical signs and symptoms which may signal the presence of a hypernephroma, about 25% of patients present with incurable metastatic disease.

Diagnosis

Cure of renal cell carcinoma is dependent upon complete surgical extirpation of localized disease. Once metastasis has occurred, other treatment modalities such as radiation and chemotherapy are of limited value. Because of these therapeutic limitations, complete critical evaluation of each patient suspected of having renal cell carcinoma is essential if disease is to be detected early while still localized.

An intravenous pyelogram (IVP), obtained because of suspicious symptoms or incidentally in the work-up of another disease process, usually begins such an evaluation. If a tumor is present, the IVP will demonstrate a renal mass which distorts the renal outline and/or the urinary collecting system.

Unfortunately, such a roentgenographic finding is non-specific. Other mass lesions, especially benign renal cysts, are extremely common and produce similar findings on IVP. Fewer than 75% of pyelograms are adequate to establish the etiology of such mass lesions with reasonable certainty.[7] Lang[8] has shown in a review of over 2000 pyelograms obtained in a general hospital population that mass lesions will be seen in 4%-5% of patients studied. Only one out of 20 of these lesions will ultimately prove to be a tumor while the other 19 will be benign lesions—usually harmless cysts.

The physician responsible for the evaluation of a renal mass should be aware of these statistics. In dealing with the individual patients, he is obliged to consider the fact that 19 of 20 asymptomatic renal masses will be benign while recognizing that it is essential to correctly identify each neoplastic mass as such and expeditiously initiate appropriate treatment.

Our approach to this dilemma has been to consider each mass as a potential tumor and to evaluate it thoroughly using, when possible, reasonably inexpensive, minimally invasive means.

Initially, ultrasound examination is performed to attempt to identify homogeneous fluid-filled cysts as opposed to solid or heterogeneous lesions likely to be tumors. Those lesions which appear cystic sonographically are punctured percutaneously and the fluid withdrawn and analyzed as to color, cytologic characteristics, and fat content. Radioopaque contrast medium is then instilled into the cyst and films taken in several positions to ascertain that the cyst wall is smooth and regular. When such an examination is properly performed, a lesion which is smooth-walled and contains straw-colored fluid, minimal fat, and normal cells can be presumed to be a benign cyst with 97% accuracy. In such cases, this constitutes complete evaluation.

Unfortunately, ultrasound evaluation has its limitations. Lesions smaller than 3 cm are below its limits of resolution and often ribs or overlying loops of bowel make a definitive reading difficult or impossible. In addition, percutaneous puncture of perihilar lesions near the major vessels can be hazardous and many radiologists are understandably reluctant to puncture such lesions. When satisfactory evaluation using ultrasound and cyst puncture is not technically possible, or when initial ultrasonic evaluation suggests a solid or heterogeneous lesion, we proceed with selective renal arteriography. This procedure allows for identification of "corkscrew" tumor vessels and artero-venous shunts present in most hypernephromas. However, 8%-14% of these cancers are hypovascular. Because of this variation in tumor vascularity, angiography will provide an accurate diagnosis in only 95% of technically satisfactory studies. When technically satisfactory studies are not possible, the accuracy rate is significantly less.

When the above studies do not provide information sufficient for definitive diagnosis, or when the results of several studies are indeterminant or conflicting, we currently recommend renal exploration in patients who are reasonable candidates for surgery. The morbidity of flank exploration has previously been demonstrated to be modest[9] and we feel justified in recommending it in the small number of individuals in whom non-invasive techniques are inadequate for definitive diagnosis. Computerized axial tomography (CAT) scanning may further obviate the need for diagnostic surgical exploration in the near future. However, at present, we have insufficient experience with this technique to allow us to accept its results unequivocally.

Treatment

Localized Disease: Appropriate treatment of a localized lesion consists of radical nephrectomy, i.e., complete *en bloc* removal of the involved kidney and its fascial envelope (Gerota's fascia), with early ligation of the renal vessels. When tumor thrombus extends into the inferior vena cava, the procedure should include cavatomy and tumor thrombectomy. In addition, some surgeons include a limited periaortic node dissection as standard therapy. When the tumor is large and/or extremely vascular, we generally attempt to occlude the renal artery at the time of transfemoral percutaneous selective renal arteriography 24-48 hours preoperatively. Such a procedure eases dissection by enhancing tissue planes with edema and by minimizing potential intraoperative blood loss. We do not advocate the procedure routinely since a post-infarction syndrome of fever, pain, and nausea lasting 24-72 hours occurs routinely. In addition, renal failure has been

associated with the procedure.[10]

The surgical approach to radical nephrectomy varies with the size and location of the lesion and the surgeon's preference. The procedure can be readily accomplished via the anterior transperitoneal, thoracoabdominal or eleventh rib extrapleural flank approach, with no readily demonstrable superiority of one approach over the other in all instances. Operative mortality approximates 5%. The fact that 30% of patients have microscopic involvement of the perinephric fat, regional nodes, or renal vein[5 11] justifies radical, as opposed to simple nephrectomy. The high incidence of renal vein and vena caval involvement makes preoperative assessment of the renal vein—either by vena cavography, sonography, high dose arteriography or CAT scan—advisable to allow for planning the appropriate surgical approach.

Survival with such treatment varies with the extent of local disease. When tumor is confined to the kidney *per se* 5-year survival is 65%. Renal vein or intracaval tumor thrombus extension alone does not appreciably worsen prognosis. However, involvement of the perinephric fat reduces 5-year survival to 47%, and regional node involvement further reduces it to 33%. Numerous studies have demonstrated no consistent alteration in these figures with either preoperative or postoperative irradiation.[12] Hypernephroma in the solitary kidney is also amenable to successful treatment by either partial nephrectomy or nephrectomy and subsequent chronic dialysis or transplantation with results similar to those noted above.

Metastatic disease: Approximately 25% of patients with renal cell carcinoma have clinical evidence of metastasis when their primary lesion is first detected. The principal metastatic sites in order of frequency are: lung, bone, liver, and brain. At present, there is no single predictably successful means of treating metastatic disease with either chemotherapy, hormonal therapy, or irradiation. Since the response rate with standard non-surgical therapy averages less than 10%, in recent years a variety of aggressive and innovative therapeutic efforts have been initiated with varying degrees of success.

One of these approaches has involved adjunctive nephrectomy. Renal cell carcinoma has the second highest reported incidence of spontaneous regression of metastases of all tumors. Such reports of "spontaneous regression" of metastatic lesions after nephrectomy have led to advocation of palliative nephrectomy as a routine in patients with metastatic disease. Review of the literature, however, indicates that such post-nephrectomy metastatic regression is a rare occurrence. As of 1973, only 60 such cases had been reported, and these were primarily "pulmonary metastases" unconfirmed by biopsy.[13] In most cases, regression was short-lived and patient survival was minimally improved. Montie et al[14] have reviewed 474 cases in which nephrectomy was performed for metastatic disease and found regression of metastases in only four patients (0.8%). In contrast, the operative mortality rate of 5%-10% in this patient group would indicate that the operative risk to the patient with metastatic disease outweighs potential benefit of nephrectomy. A case might be made for nephrectomy in patients with metastases and troublesome local symptoms secondary to the primary tumor, but in reality such local problems are rare. In patients with solitary metastases, however, an aggressive surgical approach combining nephrectomy with surgical excision of the metastatic lesions seems warranted. Such an approach gives patients a 30%-35% chance of surviving 5 years.[4 15] Excision of solitary metastases seems most likely to be effective when the metastasis appears some time later than the primary.

As mentioned previously, hormonal therapy and chemotherapy have demonstrated relatively little effectiveness in the treatment of metastatic disease. In the early 1970's, several workers reported a 15% response rate with relatively innocuous progestational agents. Unfortunately, reports by other investigators more recently have been less encouraging and, overall, less than 5% of patients will respond to hormones.

Numerous single chemotherapeutic agents have been tried in small series of patients with metastatic hypernephroma. Vinblastine seems to be the single most effective drug, with a demonstrated response rate of 25% in over 100 patients studied. However, *complete* responses were seen in less that 3% of patients, and subsequent combination chemotherapy protocols utilizing this agent have had even less encouraging results.[16] One new (investigational) drug, methyl-glyoxal bis-guanylhydrazone (MGBG), may prove to be more active[17] and has recently entered clinical trial for renal cell carcinoma.

Failure of standard therapy to alter the course of metastatic disease has led several workers to attempt therapeutic manipulation of the immune enviroment. Eidinger and co-workers[18] have treated eight patients with metastatic disease with intradermal BCG and five had some objective evidence of improvement which correlated well with non-specific immune parameters (delayed hypersensitivity skin tests). Workers at UCLA have treated 20 patients with xenogeneic RNA obtained by immunizing sheep with human tumor tissue obtained at surgery and nine patients so treated have demonstrated stabilization or slight decrease in tumor size.[19] However, no patient has had a complete remission. Other investigators have demonstrated an increase in delayed type hypersensitivity reaction after renal infarction percutaneously.[20] Studies correlating this with clinical response of metastatic disease to infarction, nephrectomy, and progestational combination therapy are ongoing.

Investigators at the University of Arizona have used a combination chemotherapy regimen (i.e., adriamycin, 40 mg/m^2, Day 1; bleomycin, 15 U/m^2, Day 1; vincristine, 2 mg, Day 1; and cyclophosphamide, 200 mg/m^2 orally,

daily, Days 3-6) plus BCG (6 x 10^8 viable Connaught organisms by scarification on Days 8 and 15 of each therapy course) to treat 13 patients with advanced recurrent and/or metastatic renal cell carcinoma. Of the 13 patients, three had a partial remission (i.e., 50% regression in tumor) and five others had objective tumor regression of less than 50%. Therapy was extremely well tolerated and responding patients had prolonged survival. Because of the encouraging results of this pilot study, a new protocol adding the promising new drug MGBG to this chemoimmunotherapy regimen has been initiated.

More extensive investigations will be necessary for adequate assessment of the value of immunotherapy and chemoimmunotherapy. It is hoped that further clinical experience with these techniques will prove them to be of significant value in the management of metastatic renal cell adenocarcinoma.

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Psychiatric Disorders

Stress Among Medical Students

Murray DeArmond, M.D.

Editor:
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As medicine becomes more technologically sophisticated, as physicians practice under closer government scrutiny, and as the demands for perfection increase in a culture that holds the professional responsible for inperfect outcome, the stresses in the medical profession cannot fail to increase concomitantly. These stresses are experienced throughout a physician's career.

In an effort to provide a forum for the review of the stress on the medical profession, *Arizona Medicine* is commencing a series of articles focused on the physicians' stress. Dr. Murry DeArmond, Director of Student Health Service at the University of Arizona, has offered us a succinct and compassionate overview of the stresses confronting medical students.

The transition between undergraduate and medical school is both stimulating and challenging to the students coping resources. In most instances, we are successful in surviving this rite of passage, however, the journey may leave us scarred by the compulsive need to overwork, the denial of our families, and by the self-esteem assaults associated with the experience of being simply an average student among a peer group perceived as brilliant.

To recognize the problems is a first step. To develop programs to prevent unnecessary casualties, however, requires imagination, a willingness to challenge tradition, and a commitment to enhance humanistic values in a system already burdened by technological demands.

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The following comments are directed to general themes of stress among medical students and will not address the more individual, particular dynamics which frequently appear in the psychiatric literature regarding emotional problems among medical students. Much of the following will surely evoke memories among those who, like myself, were at one time medical students, or those in medical school at this time. Also nursing students and those from other professional programs doubtlessly share common experiences.

How is it that bright, able young men and women who are highly selected experience so much stress? How much of this stress is an integral part of medicine, a highly complex field dealing with charged issues of life and death, serious illness and how much is unnecessary, but nonetheless part of the challenge/response sequence confronting young men and women as they make their way toward becoming physicians. That stresses exist cannot be denied. Five to ten percent of medical students drop out prior to finishing their training, and twenty to thirty percent of those remaining seek counseling for personal help.

I want to turn first to what medical students themselves say about the stresses they encounter. A recent survey of the University of Colorado medical students indicates lack of personal freedom, excessive academic pressures and feelings of dehumanization constitute the major concerns. Specifically students rank the following as high stressers in this order: lack of time for recreation, lack of time for family and intimate friends, feeling unable to learn everything, and lack of time for socializing.[1]

I present this in the form of background music to indicate from the start that there are intense pressures which leave precious little time to meet personal needs or to encourage the kind of balance in one's life which is important to all of us.

Most young medical students are at a time of life characterized by transition. Family bonds are shifting, social relationships are escalating to serious intimacy, values for life are being appropriated to fit one as a unique individual and the like. There is then a powerful hidden developmental agenda of stabilizing personal identity which needs appropriate recognition. But early on in the undergraduate years distracting pressures ensue. From the time one declares major in premedical science, curriculum accelerates and academic pressures intensify. Grades take on powerful importance. Norman Cousins, in a recent editorial in the *Saturday Review*, made reference to the "barracuda psychology" and describes this fierce competition which takes on a predominant tone of premedical work.[2] In the article he discusses the implications of all this on future physicians. Other writers have likened this early intensity, which drives some students to an inordinate obsession with the technical work at hand, as causing the student to be like a submarine going under, sort of like leaving the human race, only to surface at some later point after professional training is complete. It takes only a little bit of imagination to construct the kind of long term influences that such an experience can have on a young person at a shifting, formative period of life.

Medical school begins with exhilaration and high expectation, but soon, during the early weeks and months, stresses can become burdensome as strongly motivated men and women confront a fresh challenge in their lives. These are the students who did extremely well in high school and undergraduate school, and who now find themselves with equally skilled peers in a setting where everyone cannot be first and cannot excel. Stress results. Long since grades have taken on more than academic value. It is not "A" through "E" or Honors/Pass/Fail that is important alone. Ego, self-esteem, self-respect, are intimately bound into performance. The first low grade a medical student makes, the first time berated, an early critical put-down, intimidation - all can hit with devastating force. Fears of inadequacy, anxieties about failure can be intense. In a sense, each new student must rebuild his or her self-esteem during those early weeks of medical school, having moved from the top of the heap in undergraduate school to the bottom in one quick matriculation.

Even those who do well academically experience struggles and stresses. The quantities of material in the early years is extraordinary. When is the last time you heard someone say, "Don't bother to learn this?" The question of "how much is enough," that burden of a sense of limitless boundaries to knowledge that must be mastered, bears down and plagues students. Even setting the books aside does not bring relaxation. Students with backgrounds in the non-science areas are numbed by the challenge to memorize, memorize, memorize a mountain of material. The transition from an analytic, conceptual approach to learning, to the requirement for a more linear approach by rote is stressful to a number of students.

Unfortunately, the fierce competition mentioned before continues and constrains to a degree the potential usefulness of peer support and the kind of openness and personal exchange which assists all of us through life's discontinuities.

A major change point occurs later on in the shift from preclinical to clinical work and becomes a focus for stress. New fears of how well will I do on the wards, concerns about the responsibilities of a healer, how much knowledge do I need and will I have sufficient to make the right decisions—these and other concerns bear down. Now, if not earlier, the perceived role of a "physician" may greatly stress the candidate. Physicians, as you know, in the sterotype are cool, stalwart, dedicated individuals who work through the dark of the night unbothered by sleep. They are gentle, comforting, uncomplaining and fully knowledgeable in handling the great responsibilities of life and death.

The burden of this stereotyped role of the physician on the medical student can be significant. Undoubtedly it

contributes to role strain where students seek to find some adjustment of their own sense of inadequacy and imperfection with this role ideal. Oftentimes the adaptation can be one of managing feelings and emotions, controlling them and too often, denying them. The hazards of a role sterotype of a physician—endless work, endless assumption of responsibility—as a life style, those hazards are not adequately addressed in the medical education. The fear of becoming an inadequate healer may truly haunt the soul of an aspiring physician.

In a book I recently read, though in a different context, a similar theme seemed to me to be well expressed:

"There was a seemingly infinite series of tests, like climbing one of those ancient Babylonian pyramids made up of a dizzy progression of steps and ledges, a ziggarat, a pyramid extraordinarily high and steep, and the idea was to prove that every foot of the way up that pyramid that you were one of the elected and annointed ones who had the right stuff and could move higher and higher and even ultimately, God willing, one day that you might be able to join that special few at the top, that elite who had the capacity to bring tears to men's eyes, the very Brotherhood of the Right Stuff itself."[5]

Space does not allow exploring in more detail the stresses encountered by women medical students where combined roles and sex-role stereotyping can complicate the picture. The same is true of the stresses encountered by older students and minorities in their passage through medical school which would warrant special consideration.

Related to all this is the issue of dehumanization Much has been written about a concern that young students who enter medical school with an intense personal desire to help, care for, love, to be of service, find themselves as the years progress, more technically oriented, losing a sense of their humanity, becoming as one student told me, "a robot." No doubt a degree of emotional distancing is required in many of the professional activities of a healer, but what needs to be considered here is not that necessary adjustments but exaggerated extent to which feelings can be denied, controlled, managed and submerged as an adaptation—surely to the detriment of both the future healer and his or her patients.

Another major change point and stress point, of course, occurs around the time of graduation. Many of the old issues and fears, dreads, guilt apprehensions, touched on earlier can be revived at that time in anticipation of becoming a full-fledged doctor, assuming added clinical responsibilities in the field. But this is part of the story to come.

In conclusion, I have briefly touched on some of the global themes of stress among medical students. Certainly not all of them. Medical school, in addition to teaching about medicine, teaches each of us a lot of lessons about values, personal relationships—subjective lessons addressing the humane as well as the technical aspects of the profession. These lessons have important short and long term implications. Medical school from start to finish is not only a status passage, but a human passage as well. An old truth is that we all generally learn to treat ourselves as others, important in our lives, have treated us. And Kenneth Kenston, I believe, was right when he indicated that the medical student of the future depends in large part on the medical school of the future. The call here is not for fewer struggles or challenges, but rather for increased sensitivity to the dynamic process of interaction between student and medical school—which occurs and with such important consequence.

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Radiology

Radiology Case of the Month No. 41

Cary J. Stegman, M.D.
Jonathan M. Levy, M.D.
John K. Crowe, M.D.

Editor:
John C. Bjelland, M.D.

A 31 year old male presents in the Emergency Room with pain in the left shoulder. His shoulder x-ray is shown (Figure 1).

What is the diagnosis?

How would you follow this patient?

From: Department of Diagnostic Radiology, Scottsdale Memorial Hospital, 7400 E. Osborn Road, Scottsdale, AZ 85251.



Figure 1
Note the sclerotic densities in the humerus and scapula.

Osteopoikilosis

Diagnosis: Osteopoikilosis (spotted bone, osteopathia condensans disseminata)

Osteopoikilosis is a rare, benign condition inherited as an autosomal dominant. The salient radiographic findings are multiple ovoid or lenticular sclerotic densities in the ends of long bones, frequently grouped about the large joints. Our patient's shoulder is a typical example. Sclerotic foci produce scattered stippling in round and flat bones as well. The sclerotic densities tend to have their long axes parallel to the long axes of the bones in which they occur. They are most numerous in the metaphyses and epiphyses. The densities have been found in every bone, but are uncommon in the skull, ribs, vertebral centra and mandible.

Clinically, osteopoikilosis is associated with no specific signs or symptoms. The lesions are usually found fortuitously, and may either disappear completely or increase in size with increasing age. Uncommonly, osteopoikilosis may be associated with skin lesions, particularly cutaneous fibrous nodules or dermatofibrosis lenticularis disseminata. Osteopoikosis has also been described in association with melorrheostosis and osteopathia striata, two other benign conditions producing sclerotic lesions of bone. It has been suggested that these processes have the same pathogenesis. There is no known malignant degeneration of any of these lesions.

Radiologic differential diagnosis between osteopoikilosis and other dense lesions such as sclerotic metastases, mastocytosis, sclerotic myeloma, etc., is usually made without difficulty because of the characteristic configuration of the sclerotic lesions of osteopoikilosis. Once the diagnosis is made, no further follow-up is necessary.

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AM *Special Article*

Arizona Physicians' Attitudes Toward Consumers, Physicians and Health Care

Stephen W. Brown

This article is the fourth in a five part series on consumer and physicians attitudes toward physicians, health care, and medical malpractice.[1] Physician attitudes are featured in this article. The doctors participating in the study described below were asked a) their opinions of their colleagues, b) their *perception* of how the public views physicians and health care, and c) their opinions on factors related to medical malpractice.

Many authorities have argued the consumers' propensity to initiate a medical malpractice suit often stems, in part, from poor physician-patient

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rapport. This recognition led the Ad Hoc Malpractice Insurance Crisis Committee of the Arizona Medical Association to commission a study of the opinions, attitudes, and behavior of consumers toward health care and physicians services, especially as they may impact on malpractice suits. Previous articles in this series have reported on the results from the study of consumers. To fully examine the physician-patient interface, however, the thoughts of the medical professional must also be scrutinized. Toward this end, the Ad Hoc Malpractice Insurance Crisis committee asked that physicians' opinions and attitudes be a part of the overall study. The specific responses of selected Arizona doctors are featured in this month's article.

A survey was sent via mail to 1,000 physicians early last summer. The physician list was randomly generated by the Arizona Medical Association from the membership roster. Five hundred and ninety-one (591) doctors returned questionnaires. This response rate is more than sufficient for making generalizations about Arizona physicians as a whole.

The questionnaire was developed through the inputs of the Committee, Association's staff, public relations consultant, and the expertise of the author of this article. The instrument was also pretested prior to finalization. The physician survey contained some of the same questions asked consumers. Accompanying the physician questionnaire was a cover letter from ArMA President, William E. Crisp, M.D.

Sample Profile

The profile of respondents to the physician survey is shown in Table 1. Surgeons, family/general practitioners, and internists account for nearly half of the participants. Forty-four percent of the respondents were characterized as"other." These physicians represent various specialities ranging from anesthesiologists to urologists with no one specialty accounting for more than four percent of the total sample.

Slightly over half of the physicians are in practice with others and only 2.8 percent are associated with some form of health plan. Over two-thirds of the participants have been practicing medicine for over 10 years and nearly all are located in either metropolitan Phoenix or metropolitan Tucson. The age distribution parallels the years of experience statistics. Only 7.8 percent of the respondents are under 35, and over two-thirds are between the ages of 35-54. Ninety-seven percent of physicians responding were male.

Opinions of Other Physicians

The opinions physicians have of their colleagues are presented in Table 2. The responses to statements "a" and "c" clearly show that physicians feel their fellow professionals are ethical, responsible and competent. A substantial majority disagree with statement "g," "most physicians are more interested in making money than the well-being of their patients." In addition, three-fourths agreed that physicians are *not* at fault in most malpractice suits (statement b).

In looking at the responses to the malpractice statement according to medical specialty, greatest concurrence comes from family/general practitioners (87 percent) followed by surgeons (82 percent). Only three out of five pediatricians agreed; this group was also the most neutral toward the statement "b." Physicians outside the metropolitan areas were the most supportive of the statement. Although years in practice produced no difference, there is a slight increase in agreement with the statement as age rises. The respondents' sex and kind of practice (e.g., solo, group) had no effect on the results.

Despite the favorable impressions noted in Table 2, some negative responses were generated. Over half of the participants feel that doctors do a poor job of explaining medical problems to patients (see statement f). Nearly one-third, however, disagreed with this observation. The highest concurrence with the statement came from internists and pediatricians, while OB/gynecologists were least likely to agree (Table 3). Sixty-four percent of the women physicians concurred with the statement, compared to 54 percent for men. In addition, respondents practicing with other physicians were more in agreement (59 percent) than those practicing by themselves (48 percent). This result may arise because the former group has more of an opportunity to observe other physicians and the patients of other physicians. the respondents'geographical area, years of experience, age, and kind of practice had no effect on the results.

To help physician-patient communications, some experts advocate the development and distribution of brochures for patients. Statement "d" in Table 2 addresses this proposal. Over half of the respondents were favorable toward this idea. Although the brochure statement generated few negatives, it is

Table 1
Physician Respondent Profile

Type of Medical Specialty	Percent of Total
Family/General Practice	14.8
Internist	13.6
OB/Gynecologist	7.6
Pediatrician	4.8
Surgeon	16.9
Other	44.1
Type of Practice Engaged In	
Solo practice	39.9
Practice with others	51.5
Health Plan	2.8
Other	6.0
Length of Time in Practice	
Less than 2 years	2.4
2 to 5 years	9.5
5+ to 10 years	18.1
10+ to 20 years	42.5
20+ to 30 years	22.9
Over 30 years	4.7
Geographical Place of Practice	
Metropolitan Phoenix	67.6
Metropolitan Tucson	28.6
Other	3.6
Age Distribution	
Under 35	7.8
35-44	33.2
45-54	35.3
55 and over	23.8
Sex Distribution	
Male	97.1
Female	2.9

Table 2
Physicians' Opinions of Physicians

Statement	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
a. Most physicians are ethical and responsible people.	77.6	20.1	1.0	1.2	0
b. In most malpractice suits, the physician is *not* at fault.	28.9	46.8	15.7	7.9	0.3
c. Most physicians are *not* very competent.	1.2	2.6	1.4	18.2	76.4
d. I would like to have brochures available for my patients explaining various medical problems and treatments.	31.7	22.0	33.9	5.3	6.0
e. Most physicians are interested in making money than the well-being of their patients	2.2	9.6	9.1	36.0	42.9
f. In general, physicians do a poor job of explain-medical problems to patients	6.7	48.1	11.9	24.8	7.8

Table 3
Physician Cross Tabulation of "In General, Physicians do a Poor Job of Explaining Medical Problems to Patients" Analyzed by Medical Specialty

	Attitude				
Medical Specialty	Stongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Family/GP	5.8	43.0	10.5	27.9	12.8
Internist	2.5	63.3	12.7	15.2	3.8
OB/Gynecologist	2.3	43.2	15.9	25.0	13.6
Pediatrician	10.7	53.6	14.3	7.9	3.6
Surgeon	6.1	45.9	7.1	31.6	8.2
Other	9.0	46.5	12.5	25.0	6.3

interesting that one-third of the physicians checked the neutral alternative. One reason for the relatively high neutral response may be that some physicians would like to know more about the nature of this suggestion before reponding positively or negatively.

The greatest support for patient brochures come from OB/Gynecologists. A slight majority of the other specialists also favor brochures with a significant number being neutral. Parenthetically, the high percentage of "neutrals" may suggest that many physicians need more information on the nature of the brochures before indicating an opinion.

Sixty-five percent of the female physicians support the availability of literature for patients compared to 53 percent for the male respondents. In general, the fewer the number of years practiced the more favorableness toward brochures. The highest neutrality and least support comes from doctors who have been in practice for 20 to 30 years. The years in practice factor is related to the age of the survey participant. Greatest support for having brochures available for patients comes from those under 45 years of age. While nearly half of those over 45 voice support, many are also neutral. The participants' geographical area and kind of practice had no effect on the results.

Perception of the Publics' Views

A major question in the survey asked physicians to offer their *perceptions* of how the public views doctors and health care. These perceptions are illustrated in Table 4. Readers of earlier articles in this series will notice that the statements in the table are similar to those used in the consumer survey.

A consensus among the physicians was clearly achieved for most of the statements. The vast majority of the participants believe that the public:

- has a lot of confidence in physicians (statement a)
- often reads newspaper and magazine articles about health topics (statement b)
- feels that most physicians are ethical and responsible people (statement d)
- often watches TV programs that discuss health (statement f)
- feels that physicians do a poor job of explaining medical problems to patients (statement g)
- feels that physicians charge too much for the services they provide (statement i)

A clear majority of all medical specialties agree with the observation, "The public feels that physicians do a poor job of explaining medical problems to patients" (statement g). The *perceptions* of the publics' feelings toward physician communications parallel the doctors' observations presented earlier in Table 2. Internists and pediatricians indicated the most agareement with the statement. Female survey participants overwhelmingly felt that the public sees doctors as poor communicators of medical information.

The remaining three statements in Table 4 did not generate as distinct an impression. Nevertheless, statement "c" resluted in a majority thinking that patients feel physicians place money interests at a higher priority than patient well-being. All specialities concurred with percentages ranging from 51 for internists to 68 for pediatricians. Participants under 45 were slightly more likely to agree with the statement.

Over 70 percent of the respondents also felt that patients would like to have brochures available from them explaining medical topics (statement e). Nearly a fourth of the physicians, however, checked the neutral alternative. OB/gynecologists and family/GPs recorded considerably more support than pediatricians, surgeons, and internists. The latter three were also the most neutral. Younger physicians and female practitioners were more in agreement than their older and male counterparts, respectively. Analysis by geographical area, years of experience, and kind of practice failed to adjust the results. The

physician perceptions of the publics' interest in brochures are similar to the physicians' own preferences discussed earlier.

In Table 4, the statement generating the greatest disagreement was "h." The public feels that physicians are *not* at fault in most malpractice suits." Only a handful of physicians checked the strongly agree or strongly disagree extremes and nearly a quarter selected the neutral column. These results suggest a relatively high level of uncertainty among physicians as to what the public perceives about doctors and malpractice suits. The various medical specialties displayed substantial differences in addressing this statement (see Table 5). Although nearly half of the family/GPs "strongly" or "somewhat" agreed, only 18 percent of the OB/gynecologists felt likewise. Furthermore, the OB/gynecologists were the only specialty where a majority of the respondents actually disagreed with the statement.

As a physician's age increases, the more likely they will concur with statement "h." However, a majority of physicians under the age of 45 disagree with the observation. Geographic area also has an influence on responses to the malpractice statement, with the smaller the area the more support. For example, while only 30 percent of Phoenix physicians agreed, 47 percent of those in non-metropolitan areas affirmed the statement. Sex, years of experience, and the kind of practice did not affect the responses.

Factors in the Malpractice Crisis

The survey also requested physician opinions about factors contributing to the increase in the cost of malpractice insurance and factors leading to malpractice suits. Table 6 indicates that a majority of physicians attribute rising insurance costs to lawyers. Approximately a third of the respondents cited the number and dollar amount of suits being filed and the court system (e.g. judges, juries) as culprits. It should be noted that multiple responses were often made to this and the following question.

The second half of Table 6 shows the responses to the question, "Why do patients sue doctors? The primary reason according to the survey participants was "doctors making mistakes." Patient greed, along with anger and frustration were also common explanations. Nearly a fourth of the respondents mentioned the encouragement of suits by greedy lawyers.

Table 7 reveals how opinions varied according to a physician's specialty. The greatest variance from the norm comes from pediatricians. They are more likely to cite "doctors making mistakes" and "anger, frustration, etc.," and less likely to note patient greed. Surgeon responses

Table 4
Perceptions of How the Public Views Physicians and Health Care

Statement	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
a. The public has a lot of confidence in physicians.	30.5	59.0	5.5	4.3	0.7
b. The public often reads newspaper and magazine articles about health topics.	70.1	27.9	1.6	0.5	0
c. The public feels that physicians are more interested in making money than the well-being of their patients.	8.8	48.5	16.4	22.7	3.6
d. The public feels that most physicians are ethical and responsible people.	36.0	54.9	5.3	3.3	0.5
e. Patients would be interested in having brochures available from my office explaining medical problems and treatments.	32.2	38.2	23.9	4.0	1.2
f. The public often TV programs that discuss health.	47.5	40.1	9.3	2.4	0.7
g. The public feels that physicians do a poor job of explaining medical problems to patients.	19.3	57.3	13.3	8.6	1.6
h. The public feels that physicians are *not* at fault in most malpractice suits.	3.1	28.9	24.8	35.5	7.4
i. The public feels that physicians charge too much for services they provide.	27.5	56.8	9.1	4.5	1.4

Table 5
Physician Cross Tabulation of "The Public feels that Physicians are *not* at Fault in most Malpractice Suits" Analyzed by Medical Specialty

	Attitude				
Medical Specialty	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Family/GP	3.5	43.0	20.9	29.1	3.5
Internist	3.8	29.1	25.3	36.7	5.1
Ob/Gynecologist	4.6	13.6	13.6	52.3	13.6
Pediatrician	7.1	25.0	25.0	39.3	3.6
Surgeon	2.0	28.6	26.5	39.8	3.1
Other	2.3	27.3	27.3	32.4	10.2

Table 6
Physician Attitudes Toward Malpractice

Factors Causing Insurance to be High	Percent of Respondents Mentioned*
Dctors at fault	21.7
Lawyers at fault	52.8
Court/judicial system at fault	31.0
Insurance companies at fault	15.2
Number & dollar amounts of suits being filed	38.2
Greediness of patients	23.2
High expectations of patients (e.g. expect a lot from doctors)	11.4
Other	28.7
Don't know/no response	3.6
Reasons why Patients Sue Doctors	
Greedy people bringing unwarranted suits	41.5
Doctors making mistakes	59.7
Greedy lawyers encouraging suits	22.7
Publicity associated with big settlements	4.7
Inflation, cost of medical care, etc.	7.9
Anger, frustration, etc.	28.2
Other	33.6
Don't know/no response	4.7

**Columns sum to over 100 percent because of multiple responses to the question.*

closely parallel the "average" responses for all physicians. Age made little difference, except those over 55 are again much more likely to remark "lawyer greed." Male respondents were more inclined to suggest patient greed, while females tended to note doctor mistakes and anger, frustration, etc. more often.

The physician participants were also asked their opinions on five suggestions to help solve the malpractice problem. As illustrated in Table 8, the respondents strongly favor the last three proposals and also support the suggestion of spending more time in explaining to patients the potential problems of a particular medicine or operation. This last result was somewhat surprising, but may reflect an ideal rather than a practical solution in the eyes of many of the respondents. The proposal to put a lid on malpractice claims, while supported by a majority, resulted in a quarter being against the suggestion.

Conclusion

This article is the fourth in a series of five appearing in *Arizona Medicine*. The five articles report the findings from a major study sponsored by the Ad Hoc Malpractice Insurance Crisis Committee of ArMA. The study examined consumer and physician attitudes toward patients, physicians, and medical malpractice. The stimulus for initiating the study was the indication that patient-physician communication and understanding are fundamental to the malpractice problem.

While earlier articles have focused on consumer attitudes, the thinking of

Table 7
Physician Cross Tabulation of "Why do Patients Sue Doctors" Analyzed by Medical Specialty*

	Medical Specialty					
Factors Mentioned	**Family/GP**	**Internist**	**OB/GYN**	**Pediatrician**	**Surgeon**	**Other**
Greedy people bringing unwarranted suits	38.4	44.3	40.9	28.6	41.8	43.4
Doctors making mistakes	58.1	58.2	59.1	67.9	60.2	60.6
Greedy lawyers encouraging suits	29.1	17.7	15.9	10.7	22.5	25.0
Publicity associated with settlements	3.5	3.8	0	0	7.1	5.5
Inflation, cost of medical care, etc.	5.8	8.9	9.1	0.	9.2	8.6
Anger, frustration, etc.	23.3	26.6	40.9	42.9	28.6	26.6
Other	37.2	24.1	36.4	35.7	34.7	33.6

**Percentages do not sum to 100 because multiple responses were possible. Figures represent the percentage of respondents in each medical specialty mentioning a given factor.*

Table 8
Physician Opinions on Proposals to Ease the Malpractice Problem

Statement	Strongly For	Somewhat For	Neutral	Somewhat Against	Strongly Against
a. A law stating that the maximum amount of money that could be received by patients with malpractice claims is $500,000.	39.1	21.3	13.1	11.4	13.1
b. Greater time is spent by the physician in explaining the potential problems of a particular medicine or operation.	53.2	31.0	10.5	3.6	1.2
c. A law requiring that all disputes between patients and physicins be submitted to a panel of expert physicians and lawyers for arbitration.	73.2	17.6	4.8	2.2	2.1
d. A law limiting the percentage of the settlement that lawyers could receive.	86.6	7.6	3.3	0.9	1.6
e. A law requiring that a malpractice claim be reviewed by a panel of expert physicians and lawyers before going to court.	84.0	13.0	1.6	0.3	1.2

physicians was featured in this article. The doctors participating in the study had a favorable impression of the individuals in their profession. Despite these positive opinions, some concerns were expressed. Over half of the participants, for example, feel physicians do a poor job of explaining medical problems to patients. The physicians were also asked their *perceptions* of how the public views doctors and health care. Most agreed that the public had positive feelings toward the medical community. The greatest physician disagreement arose over whether the public feels that physicians are at fault in most malpractice suits.

The respondents were also asked about factors contributing to the increase in the cost of malpractice insurance and factors leading to malpractice suits. A majority of physicians attribute rising insurance costs to lawyers. "Doctors making mistakes" was given as the primary reason that patients sue doctors. Substantial physician support exists for various suggestions to help ease the malpractice suit problem.

The concluding article in this series will appear in the April issue. This article will offer a comparative analysis of the findings from both the consumer and physician surveys. Common as well as differing views between the two groups will be probed. This analysis will help both groups understand areas where communication strengths and problems exist.

Reference

1. The five articles are derived from the report "Consumer and Physician Attitudes Toward Physician Services, Medical Malpractice , and patients." The report was submitted by this author to the Ad Hoc Malpractice Insurnace Crisis Committee of ArMA in August 1979.

State of the Art

Thrombotic Thrombocytopenic Purpura

Gary Goodman, M.D.

Editor:
Eric H. Prosnitz, M.D.

Thrombotic Thrombocytopenic Purpura (TTP) is a syndrome characterized by fever, anemia, and thrombocytopenia along with renal and neurologic dysfunction. Because of multiple abnormal clinical and laboratory findings these patients often present as a diagnostic dilemma. Untreated TTP is rapidly fatal. However, there have been significant advances in treatment and the majority of patients now recover with appropriate therapy. Because effective therapy is available, it becomes important to recognize and diagnose this syndrome. A recent patient seen at the University of Arizona Health Sciences Center provides an illustrative case presentation.

A 27 year old female was referred for evaluation of anemia. She was well until three weeks prior to admission when she noted the onset of nausea, vomiting, headache, and fatigue. Later, lethargy, severe headache, and fluctuating periods of disorientation occurred. Her lethargy and disorientation increased and she began to experience visual hallucinations. Three days prior to admission she was found to be severely anemic and febrile; two units of red cells were transfused and the patient was transferred to the University of Arizona Health Sciences Center.

From: University of Arizona Health Sciences Center, Section of Hematology and Oncology, Department of Internal Medicine, Tucson, AZ 85724. Supported by research grants CA-17094 and T32-GM07533 from the National Institutes of Health, United States Public Health Service, Department of Health, Education and Welfare, Bethesda, MD 20014.

There was no history of hematemesis, melena, hematuria, obvious blood loss, rash, arthritis, or arthralgias.

Past medical history was significant for a history of seizures, the last occurring about one year ago. There was also a past history of oral amphetamine abuse.

On examination the patient was found lying in bed, picking at the bed sheets, and occasionally screaming. The blood pressure was 150/80, pulse 90, temperature 99.6° F. There were multiple ecchymoses over the extremities and back; petechiae were noted on the uvula and gingiva. The sclera were icteric. Cardiac exam revealed a II/VI systolic ejection murmur at the left sternal border without radiation. There was no heptosplenomegaly. Gross blood was visible in the vagina and the stool was guaiac positive. The patient was lethargic. When aroused, she was disoriented, actively hallucinating and had rambling speech and thoughts. There were no focal neurologic defects.

The hematocrit was 23.6%. The peripheral blood smear showed marked anisocytosis, shistocytes and polychromasia. The white cell count was 3600/mm^3 with a normal differential. There were seven nucleated red blood cells per 100 white blood cells. The reticulocyte count was 17% and the platelet count 15,000/mm^3. The LDH was 458 u/ml, total bilirubin 3.1 mg%, direct bilirubin 0.7 mg%. Prothrombin time was 14.7 sec./11.2 sec. The PTT was normal. The fibrinogen was 175 mg%. No fibrin split products were found. ANA was positive

Table 1[4]
Symptoms and Physical Findings of Patients with TTP

	Cases	%
Fever	237/243	98
Purpura, hemorrhage	241/251	96
Pallor or anemia	246/256	96
Neurologic	250/271	92
Proteinuria, hematuria, casts, or azotemia	191/217	88
Jaundice	113/271	42
Weakness, fatigue, malaise	92/271	34
Nausea, vomiting	69/271	25
Abdominal pain	36/271	13
Chest or other pain	21/271	8
Arthralgia or myalgia	18/271	7

Table 2[4]
Hematologic Findings in Patients with TTP

		Cases	%
Anemia			
Hb<5.4 g/100 ml	72	246/256	96
Hb 5.5-10.4 g/100 ml	174		
No anemia		10/256	4
Reticulocytosis 3.0-80.0% (avg. 19%)		148/164	90
Nucleated red blood cells (1-56/100 WBC)		93/?	
Coombs test positive		9/126	6
Jaundice		113/271	42
Bilirubin >1.0 mg/100ml (1.0-18.0)		143/163	88
Thrombocytopenia <120,000/mm^3		216/224	96

at 1:640 with a homogenous pattern. C_3 and C_4 were normal. Urinalysis showed +2 protein and +4 red blood cells. The BUN was 7.0 mg/dl and the creatinine 1.0 mg/dl.

This patient presented with all the classic findings of thrombotic thrombocytopenia purpura. This syndrome was unrecognized until 1925 when Moschowitz[1] described an acute fatal illness associated with anemia and hemiparesis. Autopsy revealed widespread intra-arterial hyaline thrombi. Four additional cases were reported by Baehr, et al[2] in 1936. These investigators were the first to point out the associated thrombocytopenia. In 1947 Singer, et al[3] described additional cases and coined the term Thrombotic Thrombocytopenic Purpura (TTP). Since 1947 approximately 450 cases of TTP have been reported in the literature. An extensive review by Amorosi and Ultmann[4] in 1966 reviewed 271 published cases. That article has provided the basic clinical and laboratory criteria now used in establishing the diagnosis of TTP.

Epidemiology

The reported incidence of TTP appears to be stable. Between 1953 and 1964, 216 cases had been published. From 1964 to the late 1970's approximately 250 additional cases have been reported. The true incidence of the syndrome is unknown, since it is unlikely that all cases are reported. Because of the rarity of the syndrome it is also likely that many cases are not recognized. A retrospective Norwegian study of 3,300 consecutive autopsies over a 5 1/2 year period uncovered only three cases of TTP.[5] TTP occurs in all age groups. Cases have been reported in infancy and in the eighth decade of life. However, the majority of cases are in young adults, age 10-40 years. There is a 56 percent female predominance. TTP is often diagnosed during pregnancy and it appears that the true incidence in females is higher during pregnancy.

Clinical and Laboratory Findings

Seven to ten days prior to the development of clinical TTP most patients experience vague non-specific prodromal symptoms. These are usually neurologic (headache, weakness, parasthesias, abnormal behavior) or gastrointestinal (nausea, vomiting, diarrhea, abdominal pains). By the time of presentation the majority of patients have the classic pentad; fever, thrombocytopenia, anemia, neurologic dysfunction and renal abnormalities. This pentad of findings occur in almost 90 percent of patients (Table 1).

Fever occurs in 98 percent of patients at some time during their course. The fever can be intermittant or constant and can range to 105° F. Neurologic abnormalities occur in 92 percent of patients, and can be multiple and intermittant. They include psychosis, coma, and flaccid hemiplegias which may clear completely a few hours after their appearance. Seizures and coma are unusual as an initial finding, but 51% of patients develop either or both prior to death.

Anemia was one of the earliest recognized hallmarks of the syndrome. The anemia is characterized as a microangiopathic hemolytic anemia and is usually quite brisk (Table 2). Reticulocytosis averages 19%. The peripheral blood film shows ample evidence of red cell fragmentation with helmet cells, shistocytes, and spherocytes. The degree of hemolysis can be somewhat estimated by the elevation of the LDH. The majority of patients also have indirect hyperbilirubinemia. RBC half life has been estimated to be three to six days. Thrombocytopenia, another of the classic pentad, occurs in 96% of the patients. Platelet counts range from 3,000 to 120,000/mm^3. Platelet half life has been estimated at four hours. Other common findings include a leukocytosis in 60% of cases. Leukopenia was seen in only four of 230 cases. Examination of the bone marrow shows appropriate response with erythroid and megakaryocytic hyperplasia. Renal abnormalities include proteinuria, red cell casts, azotemia and occasionally acute renal failure. Cardiac abnormalities are usually limited to mild ST-T changes on electrocardiogram. However, there have been case reports of bundle branch block and sudden death. This is presumably due to arterial occlusion and ischemia of the conducting tissues.

Differential Diagnosis

TTP may be confused with Systemic Lupus Erythematosis (SLE). A significant number of patients with a clinical diagnosis of TTP have positive tests for antinuclear antibodies. There appears to be significant overlap between TTP and SLE, and precise diagnosis may require biopsy.

Because of the many clinical and pathological similarities the diagnosis of TTP may be confused with Disseminated Intravascular Coagulation (DIC). Jaffe, et al[6] in 1973 extensively evaluated twelve patients with TTP looking for evidence of DIC or other coagulopathies. Six of their patients had normal coagulation parameters, two had borderline abnormalities and four had evidence of low grade DIC. In the patients with evidence for DIC, heparin therapy did not alter their course. Their conclusion was that DIC appeared to be a secondary event related to the massive hemolysis and platelet activation. With our present understanding DIC probably does not play a significant role in either the pathogenesis or clinical course of TTP. In the uncomplicated case, the prothrombin time is normal, fibrin split products are absent and fibrinogen levels are normal to high.

Pathology

The histologic findings in TTP are fairly characteristic. The small arterioles and capillaries are occluded with hyaline-like material. This material is thought to be primarily platelets with or without fibrin and leukocytes. These deposits are either intraluminal or subendothelial. There is no perivascular inflammation although occasionally endothelial proliferation is observed. The characteristic occlusions can be found in any organ but are most often seen in the heart, brain, kidneys, pancreas and adrenals. Because of the transient and incomplete nature of the arterial occlusions, there is rarely tissue infarction.

At the time of Amorosi and Ultmann's review[4] in 1966, most patients had a histologic diagnosis only at the time of autopsy. Efforts to obtain premortem histologic confirmation have included biopsy of skin, subcutaneous tissue, muscle, lymph nodes, bone marrow, and because of therapeutic intervention, the spleen. Except for the spleen, biopsy findings that support the diagnosis occur in only 10% of cases.

In the older literature it has been reported that 60-70% of patients with TTP have positive histologic findings on gingival biopsies. Goodman et al[7] in 1978 reviewed their experience with gingival biopsy. They had 18 patients with TTP and only seven biopsies were found to be positive; or about 39%. Goodman also found that the intraluminal hyalin-like deposits were not specific for TTP. Ten to 20% of 204 patients with other types of oral pathology also had intraluminal deposits. They concluded that the subendothelial deposit was more specific for TTP since none of their 204 control cases had this finding. It is most authors' opinion that the diagnosis of TTP can be made on clinical and laboratory grounds and that histologic confirmation, although preferred, is not necessary.

Etiology

The etiology of TTP is unknown. It has been postulated that drug allergy plays a role. Cases have been reported after exposure to sulfas, penicillin, procaine, iodine, and chlorpropamide. Outbreaks in families[8] and married couples[9] have suggested an infective cause. Rickettsia-like organisms have been grown from the blood of some patients with TTP.[10] Mycoplasma have also been implicated. In the majority of cases, however, an infective organism cannot be identified.

Many authors have pointed out the similarities between TTP and SLE along with other autoimmune diseases. There have been reported cases of TTP developing in patients with longstanding well-documented lupus. However, most of the reported cases of SLE and TTP have been in patients that present with findings compatible with both diseases. In a retrospective autopsy study looking at the relationship between these two diseases, 23% of 151 patients dying of TTP were found to have histologic findings also compatible with diagnosis of SLE.[11] These included Libman-Saks endocarditis, "onion skin" spleen, and "wire-loop" glomeruli. Even in this retrospective study it was impossible to differentiate patients on the basis of clinical and laboratory findings. Autopsies were necessary for a correct diagnosis. On the whole the patients with SLE and TTP had a worse course than those with TTP alone. Thus, it appears that in the acute setting many patients with TTP have findings also compatable with SLE. It is not known if the host with SLE is more susceptible to the etiologic factor or factors of TTP or if SLE itself is the underlying etiology. The relationship of these two diseases needs more extensive investigation.

At present the most widely accepted pathogenic theory of TTP is that of Brain,[12] Pitney,[13] and others. They have theorized that an unknown antigenic challenge (drug?, bacterial?, viral?) leads to the formation of antibodies. These antibodies and their antigen form soluble immune complexes. These complexes are vasculotoxic and injure the microvasculature, causing platelet aggregation and fibrin deposition. The soluble immune complexes also cause direct platelet release of ADP, 5-HT, and other mediators of platelet aggregation and adhesion. Widespread deposition of fibrin and platelet clots lead to end organ ischemia and malfunction (CNS, kidney, heart). Platelets are consumed and hemolysis occurs as red blood cells are fragmented by intravascular fibrin strands. This theory has yet to be confirmed. In fact, in two recently reported cases immune complexes were not found using the Raji cell radioimmunoassay.[14]

TTP is best considered a syndrome and not a distinct disease entity. There are probably multiple etiologic and host factors that lead to the development of TTP. Since neither the etiology nor the pathogenesis of the disease is known, therapy to date has been empiric.

Treatment

Without treatment TTP is rapidly fatal with the majority of patients dying within 1-2 weeks of hospitalization. Treatment has significantly changed this outcome and the majority of patients can now be induced into remission. The oldest and most commonly used empiric treatment has been high dose corticosteroids. Most reported cases have used corticosteroids in combination with other treatment modalities. Steroids are now rarely used alone.

Heparin was in vogue at one time because of the histologic picture similar to disseminated intravascular clotting. Since DIC has been found to play a minor role in TTP, heparin therapy is rarely used today.

After steroids, splenectomy has historically been the treatment of choice. The role of splenectomy in the management of TTP was examined by Reynolds, et al in 1976.[15] They found 28 survivors out of 39 splenectomized patients, a 70% response rate. Most of these patients had also received anti-platelet drugs and steroids in addition to splenectomy. Again it is impossible to dissect out the exact role splenectomy plays in treatment. Splenectomy remains second to steroids as the most widely used treatment.

Over the past five years, the anti-platelet drugs aspirin and dipyridamole have been extensively studied.[16] Theoretically, these drugs are very attractive. By preventing platelet aggregation and adhesion, platelet plugs can be prevented. Most reported cases utilized a combination of both drugs. There is a reported 60-70% response rate to this treatment. Some authors found a dose response curve to the anti-platelet drugs. Patients would respond to high dose dipyridamole (i.e., 600 mg/day) after being refractory to lower doses. The response to these drugs is usually observed within 48 hours with a rise in platelet count and a fall in reticuloyte count and LDH.

The newest therapeutic maneuvers involve removal of plasma and transfusion of fresh plasma, either by exchange transfusion,[17] plasmapheresis,[18] or hemodialysis.[19] These could theoretically remove immune complexes, platelet antibodies or other "toxins," or, provide a missing "stabilizing" factor. These procedures also give a 60-70% remission rate. Responding patients usually show improvement within 48 hours. Often patients treated with exchange transfusion or plasmapheresis receive steroids as their only other treatment.

Because of the multiple treatments available, all giving similar responses, most patients usually go through a series of treatment trials. Most authors recommend initiation of treatment with 60-100 mg prednisone/day, and the anti-platelet drugs aspirin, 1.2-2.4 gram/day, and dipyridimole, 600 mg/day. Responders usually show an increase in platelet count, a fall in reticulocyte count and LDH and an improvement in neurologic function within 24-48 hours. If there is no improvement, patients should undergo exchange transfusion or plasmapheresis with fresh frozen plasma replacement. Response again is usually rapid and always within 24-48 hours. If there is still no improvement, a splenectomy should be done. Once a patient responds to treatment his natural history is unknown. Some patients relapse as soon as treatment is stopped and other patients remain in a complete remission after one course of treatment. Some patients relapse years later and others are disease-free for up to 13 years. After successful treatment patients should be followed closely. Many authors suggest maintenance therapy of aspirin and/or dipyrimidole.

In summary, TTP is a syndrome characterized by thrombocytopenia, microangiopathic hemolytic anemia, fever and neurolgic and renal dysfunction associated with diffuse intravascular platelet plugs. Although the etiology of this syndrome remains obscure, empiric therapy with corticosteroids, anti-platelet agents, splenectomy, and plasma removal or exchange is associated with improved patient survival.

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A Program of Primary Care Education in Pediatrics at the University of Arizona

During the past two or three decades, there have been dramatic changes in the context of pediatric practice. Although the management of acute episodic illness and the health supervision of newborns and growing children occupies a substantial portion of the pediatrician's time, there are other significant demands. Improvements in modern technology have led to a larger role for the practicing pediatrician in the care of children with handicaps, tumors and chronic disease. With increasing frequency, counsel is sought by parents of children with school problems, learning disabilities and behavioral disorders. And there is a greater demand for attention to the special needs of adolescents. Approximately 85% of pediatric residency graduates choose a career in community practice. Yet training programs, most of which developed in academic medical centers, have traditionally emphasized the acquisition of skills in the management of the complex inpatient and placed less effort on education in ambulatory pediatrics. The discrepancy between the content of residency education and the realities of pediatric practice was a major factor in the 1960's in the development of "the dissatisfied pediatrician syndrome." Recently, the Task Force on Education of the American Academy of Pediatrics has examined the current content and future trends of pediatric practice.[1] The report defines the deficits of residency education in preparing graduates for pediatric practice and makes several recommendations for change and improvement.

Since 1977, the Department of Pediatrics at the University of Arizona has been developing a program of primary care education. The main components of the program are a model group practice, block rotations in the outpatient department and a series of elective experiences which enable residents to pursue further education in special areas such as adolescence and childhood behavioral problems. A curriculum of lectures, seminars, workshops and practical sessions has been designed to provide a theoretical framework and to complement the clinical experiences.

Residents spend a minimum of one-half day a week in caring for patients from their practice panel, regardless of their current clinical assignment. The model group practice allows the residents to experience the role of a primary care physician in the provision of comprehensive care to a group of 100-200 patients for the duration of the three-year training period. Thus, in the context of longitudinal care, the resident is able to learn the principles of health maintenance, to observe the normal growth and development of children at different ages over a three-year period, to gain an understanding of the natural history of acute and chronic illness, and to evaluate children with behavioral and developmental problems. In this setting there is ample opportunity to learn the meaning of the doctor-patient contract and the elements of team participation by the sharing of patient care with other physicians, nurse practitioners, psychologists, and social workers. Two model practices have been established, one at University Hospital and one at the Kino Ambulatory Care Center. Each resident has a faculty preceptor who supervises the health care delivered in the model practice, serves as a model of a primary care physician and, through formal and informal teaching, encourages the resident to achieve the goals and objectives of residency training. The preceptors include the five full-time faculty of the Ambulatory Section, the four full-time pediatricians based at Kino Hospital and four practicing physicians from the Tucson community. The program trains 12-13 residents at each of the three levels of training. Individual preceptors work with residents from each training level and the preceptor-resident group shares a common half-day in the practice. The cornerstone of support for the group practice is an office staffed by secretaries and nurse practitioners who promote continuity by acting as liaisons between the patients and physicians in addition to performing the essential clerical work. Patients requiring care in between the half-day sessions are triaged by the nurse practitioner who contacts the primary physicians or ensures the acute problem is managed by a resident assigned to the block rotation. Night call is shared by senior residents in rotation with faculty support. Despite the obvious difficulties, approximately 75% of patient visits are conducted by the primary care physician. Patients are recruited to the practice panel in such a way as to ensure experience with a broad range of patient problems and children of different ages. Children with chronic illness are included

to enable the resident to cooperate with specialist consultants and observe over time the impact of chronic disease on both the child and family. A family therapist, child psychiatrist and social worker are available to assist with the management of children with behavioral problems and educate residents in the psycho-social aspects of patient care.

The block rotations in the clinics enable residents to broaden their experience with patient problems and during this period the major portion of the theoretical content of the curriculum is presented. Provision is made for residents to learn office orthopedics, gynecology and dermatology, areas previously neglected in our program. In addition to the traditional format of lectures and seminiars, innovative teaching methods are being explored such as a series of three-hour workshops on special areas such as family dynamics and the care of the handicapped child. Animal models have been developed to train residents in the techniques of emergency care such as cardio-respiratory resuscitation, the management of status asthmaticus, and the suturing of lacerations. In the final year of training workshops are conducted on the establishment and management of the economic and business aspects of private practice.

A comprehensive evaluation system has been developed to monitor both the development of the program and the progress of residents towards achieving the objectives of training. The true effectiveness of the program must await assessment by the program graduates in their future career experiences. The first group of residents will complete the program in June of 1980. In general, the Primary Care Training Program has been welcomed by pediatric residents and patients are appreciative of the continuity of care and the opportunity to have a single physician care for the all the children in their families. To the residents, the most valued aspects of the program so far have been the continuity experience, the opportunity to develop a collegial relationship with the faculty preceptor, and the innovations in curriculum design. The development of this program has served to complement the already well-established education at the University of Arizona in secondary and tertiary levels of pediatric care. On completion of the residency, it is intended that graduates should have a sufficient knowledge of general pediatrics to prepare them for a future career in either academic pediatrics or in community practice.

The Primary Care Training Program is the recent recipient of the Outstanding Teaching Award presentd by the Ambulatory Pediatric Association.

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Reference

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Auxiliary Highlights

Yavapai County

It takes hours of planning, extending over many months, to successfully create new Auxiliary projects. "You have to have heart" and you have to be flexible, as members of the Yavapai Medical Society Auxiliary know.

Their plans for decorating the doctors' lounge at Prescott's Community Hospital had to be altered when it was decided that the space would be enlarged by remodeling and adding two adjacent rooms. The Auxilians plan to help furnish this area with new chairs, tables, and a large coffee pot. They have already purchased 30 chairs for the doctors' conference area.

The hospital has benefitted from many Auxiliary projects. Last year, creative Auxilians decorated labor rooms at the hospital. They painted murals and used bright fabrics to make the rooms more restful and attractive.

President Carol Gardner is excited, too, about their proposed Teen Awareness program. Originally the Auxiliary had planned to present a program on nutrition for seventh, eighth, and ninth grade girls. Members soon realized how many other areas in health education should be covered. So they contacted principals at Prescott's two junior high schools to see if the Auxiliary could bring this type of program to the students.

Working with the PTA, a questionnaire was sent home with the students to see if there was interest in programs on nutrition, drug and alcohol abuse, sex education, smoking, personal hygiene and similar subjects. The Auxiliary knows that the schools are interested and counselors, school nurses, and physicial education teachers have indicated their support.

Now the Auxiliary is assessing the needs, surveying what information is already available, and working up thorough, interesting, well-done programs which Auxilians can take to the teenagers. Doctors have already agreed to donate their time in support of the program.

While the 43 Yavapai Auxilians work on this challenging project, they continue to meet the other health needs in their community. They award a nursing scholarship each year. They support the Kiwanis Club at its quarterly blood drives by passing out juice and sandwiches to blood donors. In December they contributed 46 Christmans gifts for the elderly. In January they provided cookies for the Sunday teas for ambulatory patients at Ft. Whipple Veterans Hospital. They raise funds for their projects with bake sales at the hospital cafeteria, an annual rummage sale, white elephant auctions.

There is time for fun, too, at Yavapai's meetings. In November, Auxiliary members heard Patti Bennan speak on the Kachinas and the Hopi Indians. Patti, President-Elect of the Yavapai Auxiliary, is a museum docent. Then in December, the Medical Society members invited their spouses to join them for a Christmas dinner party at a local restaurant. It was a festive evening, with dancing and entertainment by the Contemporaries, a local singing group which includes several Auxiliary members.

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We are all inclined to engage in "Monday morning quarterbacking," convinced that (when reviewing the cases of others), we would not have committed the error that is revealed when all of the facts are available. However, there is inverse vehemence of the criticism in relation to the erudition and experience of the critic.

This retrospective judgement is employed by physicians and juries alike in fixing blame. Witness the award to the young lady who sued her pediatrician (after she attained her majority) for blindness resulting from retrolental fibroplasia secondary to oxygen administration necessitated by prematurity. At the time of her birth it was not recognized that oxygen therapy could produce blindness, yet a jury awarded her a large sum. Lawsuits have arisen for thyroid cancer developing from irradiation of the thymus in the days before it was known that the patient would be at risk. Suits have also been instituted for vaginal carcinoma developing years later in daughters of mothers given diethylstilbesterol to keep them from aborting, and in sons who developed adenomatoid tumor of the spermatic cord. It required sharp observation over many years, as well as keen reasoning to tie these events together. Who did this enlightening labor? The physicians!

The great truth that is revealed in these retroactive malpractice cases is that at the time and with the knowledge available, no other course could have been taken.

As a result of this extension of liability, doctors are adjudged to have the responsibility, in the light of more recent knowledge, to search for patients given a Dalkon shield, for example, and to warn them that they may develop problems. This applies to anything that is subsequently shown to have an adverse cause and effect relationship.

One can appreciate the difficulty, if not impossibility, of finding old patients who have been dispersed, changed their names, or become Vice President and dropped from sight. This means in effect that we will have to keep records indefinitely, review them periodically as new revelations unfold, and maintain updated addresses until our patients die. It doesn't seem probable that we can discharge this legal obligation by dying ourselves. The courts have reached beyond the grave and rearranged the disposition of the estate. Perhaps future decisions will require your executor to review the literature, current and recent developments, search for and notify any patients at risk. This should take care of most of the funds your widow was expected to live on. The only way this could be handled is by computerization of all records with frequent update review of what currently become therapeutic errors. What of the expense, and who is being blamed for the high cost of medical care?

Certainly it is true that whom the gods would destroy they first make mad.

Yours truly,
Paul B. Jarrett, M.D.

Medical History

James R. Moore, M.D. An Appreciation On His 90th Birthday

John W. Kennedy, M.D.

Soldier WWI, mining physician and surgeon, hospital administrator, medical missionary, medical advisor to the Arizona Industrial Commission, consultant to Arizona Blue Cross and Blue Shield, physician par excellance.

These are a few of the adventures and professional accomplishments of the beloved "Jimmy" Moore during his four score and ten years of productive living.

Dr. Moore was born in New Lisbon, Ohio, in 1890, his father was a Presbyterian minister. He attended secondary school in Virginia and graduated from Muskingum College in 1910. Then he spent a year teaching english at a Mission College in Assiut, Egypt. He returned to attend Western Reserve Medical School but was forced, when a junior, to take some months off. All this time he had been working his way through college and medical school, and his last position had been that as more or less an extern and laboratory assistant in a tuberculosis sanitorium. It was here that he apparently contracted tuberculosis laryngitis and was forced to go to Ashville, North Carolina for some months to recover.

Following this he transferred to the University of Southern California Medical School and was graduated from there in 1916. He promptly traveled to San Francisco to take the state boards and spent a few months as an intern at the Los Angeles County Hospital but because of the death of his father and stringent economic needs he took a position as assistant surgeon at the Cananea Consolidated Copper Company in Sonora, Mexico in June of 1916. He had several adventures there for this was the time when Pancho Villa was chasing people up and down the border; in fact one time they had to come back to the states because of revolutionary trouble. It was here that he met Dr. Thigpen who was then the chief surgeon at the mine; who along with Dr. Miller had been held captive by Pancho Villa for a period of time but escaped.

In 1917 since he was back out of Mexico, due the revolutionary activities, he joined the American army. By now, "He kept us out of war," President Wilson had declared war on Germany. Dr. Moore was promptly transferred to France with the Unit and spent time there with the front line unit. In the meantime he had received a letter from Dr. Thigpen asking him to join him in Jerome where Dr. Thigpen was now the chief surgeon of the United Verde Extension Mine. So after a time, he journeyed back to Arizona and was associated with the mining company from 1918 to 1925. Then his missionary spirit took over again and he and his wife spent two years, 1925 - 1927, in Egypt where he was a teacher and missionary physician.

He returned to Jerome late in 1927 and was there until 1933 when his progressive arthritis forced him to give up surgical practice.

In the meantime he had been president of the Yavapai County Medical Society and members of the society had carried on their own continuing medical education program by journeying to Prescott once a month where they met with the physicians there and with an assigned subject prepared papers which they debated one with another. He looked upon this as one of the early efforts in Arizona to form the Medical Education Club. When Dr. Moore came to Phoenix he was an early member of the Clinical Club which was organized by W. Warner Watkins, M.D.

Early after finishing medical school he married Grace Montgmery a childhood sweetheart from back east and he brought her immediately to the mining camp at Cananea and this led to some adventures.

He came to Phoenix in 1933 appointed by Gov. Moeur as administrator of the State· Hospital and it was during his tenure that the famous Winnie Ruth Judd was confined here initially.

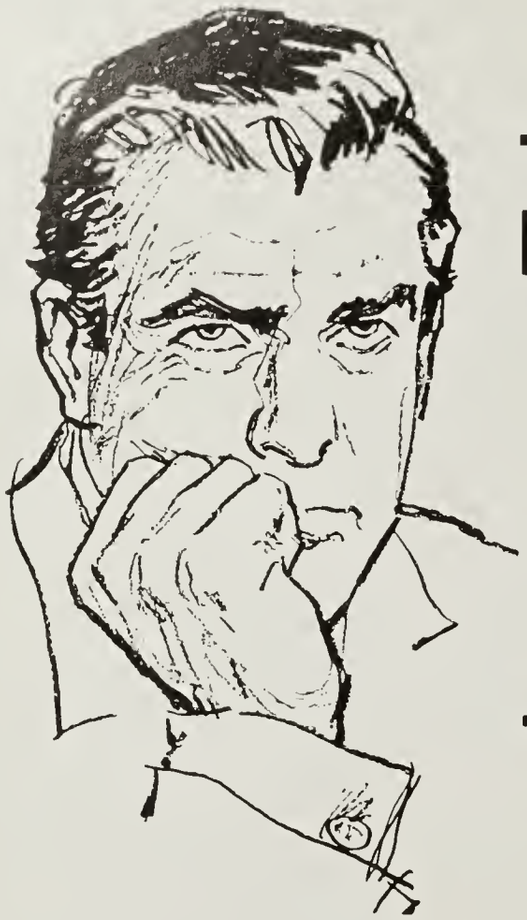
In 1937 he followed Dr. Ralph Palmer as an assistant medical advisor to the Industrial Commission and within a year or two became the medical advisor-in-chief and continued that for many years; probably until 1965.

In the meantime he served as President of the Maricopa County Medical Society and was voted an honorary member of the Western Orthopedic Association.

Even before his retirement from the Industrial Commission he became an advisor to the Arizona Blue Cross and Blue Shield and continued that work until 1975.

Dr. Moore continues active in his church and in adult center activities.

During all the years I have known Dr. Moore, I have never heard him mention or complain of the progessive or crippling arthritis which he has suffered. He always greets you with a smile and is always interested in what is coming up next. So with all of his other colleagues and friends we join in this salute to this young man of ninety summers.



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Constipation acute or chronic

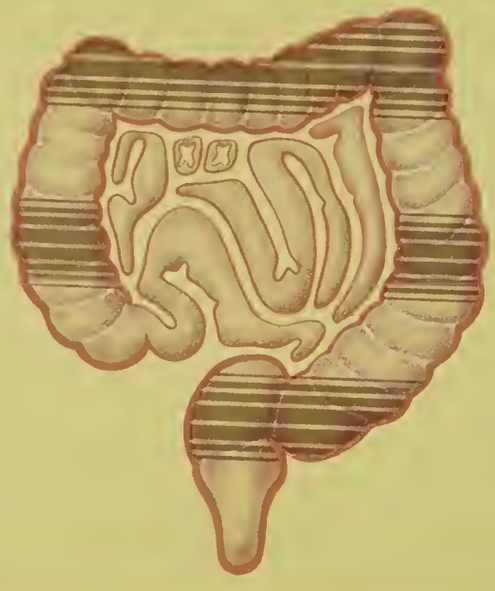
Constipation may be caused by conditions affecting the filling and emptying of the rectum.

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Interference in propulsive contractions

Impairment of smooth muscle contractility

Obstruction of the lumen





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Prescribing Information

ACTIONS: Perdiem™, with its gentle action, does not produce disagreeable side effects. The vegetable mucilages of Perdiem™ soften the stool and provide pain-free evacuation of the bowel. Perdiem™ is effective as an aid to elimination for the hemorrhoid or fissure patient prior to and following surgery.

COMPOSITION: Natural vegetable derivatives: A unique blend of psyllium and senna (Plantago Hydrocolloid with Cassia Pod Concentrate).

INDICATION: For relief of constipation.

PATIENT WARNING: Should not be used in the presence of undiagnosed abdominal pain. Frequent or prolonged use without the direction of a physician is not recommended. Such use may lead to laxative dependence.

DIRECTIONS FOR USE—ADULTS: Before breakfast and after the evening meal, one to two rounded teaspoonfuls of Perdiem™ granules should be placed in the mouth and swallowed with a full glass of warm or cold beverage. Perdiem™ granules should not be chewed. After Perdiem™ takes effect (usually after 24 hours, but possibly not before 36-48 hours): reduce the morning and evening doses to one rounded teaspoonful. Subsequent doses should be adjusted after adequate laxation is obtained.

IN OBSTINATE CASES: Perdiem™ may be taken more frequently, up to two rounded teaspoonfuls every six hours.

FOR PATIENTS HABITUATED TO STRONG PURGATIVES: Two rounded teaspoonfuls of Perdiem™ in the morning and evening may be required along with half the usual dose of the purgative being used. The purgative should be discontinued as soon as possible and the dosage of Perdiem™ granules reduced when and if bowel tone shows lessened laxative dependence.

FOR COLOSTOMY PATIENTS: To ensure formed stools, give one to two rounded teaspoonfuls of Perdiem™ in the evening with warm liquid.

DURING PREGNANCY: Give one to two rounded teaspoonfuls each evening.

FOR CLINICAL REGULATION: For patients confined to bed, for those of inactive habits, and in the presence of cardiovascular disease where straining must be avoided, one rounded teaspoonful of Perdiem™ taken once or twice daily will provide regular bowel habits. Take with a full glass of water or beverage.

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Schedule of Events

89th Annual Meeting
Arizona Medical Association, Inc.

DECADE FOR DECISION

• *April 23 - 27, 1980* •

The Pointe Resort, Phoenix, Arizona

Annual Meeting Program at a Glance

Wednesday, April 23, 198

Wednesday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D, E
6:00 A.M. to 8:00	Executive Committee Breakfast **#1 & 2**			
8:00 A.M. to 10:00		Board of Directors Meeting **#1 &2**		
10:00 A.M. to 12 Noon			House of Delegates 1st Session **#F & G**	
2:00 P.M. to 5:00	Reference Committee on Resolutions **#1 & 2**	Reference Committee on Amendments **#1 & 2**		
7:00 P.M.				Physician Rehabilitation Committee Dinner Meeting **#A**

Thursday, April 24, 198

Thursday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D,
7:00 A.M.	Six Mile Fun Run - Herberger Park #2 - North 20th Street & East Maryland Ave, Phoenix pre-registration required			
9:00 A.M. to 12 Noon			Physicians' Families Program "Changing Values" **#A-G**	
12:30 P.M. to 2:00		Physicians' Families Program Informal Luncheon		
12 Noon	Golf Tournament - Orange Tree Golf Club - 56th Street & Shea Blvd. - pre-registration required			
12 Noon	Tennis Tournament - Paradise Valley Tennis Club - 6802 E. Northern Ave. Paradise Valley - pre-registration required			
12 Noon			Set up of Exhibits **#A - E**	
12 Noon to 2:00 P.M.	International College of Surgeons Luncheon - **#1**			
12 Noon to 3:00				Past Presidents' Luncheon **#A**
5:30 P.M. to 7:30 P.M.	Maricopa County Caucus **#2**			
7:00 P.M.	Reception and Western Steak Fry - The Mountain Preserve - Featuring music by the *Three of Diamonds*			

Friday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D,
6:00 A.M. to 8:00				Pima County Caucus **#A**
7:00 A.M. to 12 Noon			Set up of Exhibits **#A - E**	
8:00 A.M. to 12 Noon			House of Delegates 2nd Session **#F & G**	
11:30 A.M. to 2:00 P.M.				Arizona Society of Allergists - Luncheon **Arizona Biltmore**
12 Noon			Exhibits Open **#A - E**	
12 Noon to 2:00 P.M.				Arizona Chapter American College of Surgeons Luncheon - **#A** Arizona Urological Society Society Luncheon - **#B** ArMA Board of Directors Luncheon **#C** Arizona Thoracic Society Luncheon **#D** Arizona Society of Otolaryngology & Maxillo-Facial Surgery **Room 2266**
Friday P.M.	**North Court Room #1**	**North Court Room #2**	**Grande Ballroom #F**	**Grande Ballroom #G**
2:00 to 2:30	**Shunt Ascites** *Volker K.H. Sonntag, M.D. presentor* *John J. Kelly, M.D. co-author*	**Activities of the Arizona Maternal Mortality Committee** *William A. Susong, M.D.* *Moderator: Donald J. Ziehm, M.D.*	**Hypnotherapy of Hard-core Smokers** *Robert E. T. Stark, M.D.* *Moderator: Boyden L Crouch, M.D.*	**Course and Prognosis of Chronic Obstructive Pulmonary Disease** *Thomas L. Petty, M.D.* *Moderator: Marvin C. Schneider, M.D.*
2:30 to 3:00	**Intracranial Microvascular Anastomosis for Cerebral Ischemia** *Philip R. Weinstein, M.D.*	**The Surgical Management Of Impotence** *Andrew J. Presto, III, M.D. presentor* *Ralph Earle, Ph.D., and Arthur Fishman, M.D. co-authors* *Moderator: Marshall B. Block, M.D.*	**Stone Basket Problems** *Ronald Pfister, M.D.* *Moderator: Wm. W. Bohnert, M.D.*	**Pharmaco Dynamics of Drugs in Allergy and Immunology** *David S. Pearlman, M.D.* *Moderator: Luis B. Tan, M.D.*
3:00 to 3:30	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**

Friday P.M.	North Court Room #1	North Court Room #2	Grande Ballroom #F	Grande Ballroom #G
3:30 to 4:30	**Obesity and Diabetes A Metabolic Odd Couple** *Karl E. Sussman, M.D.*	**Intraesophageal Acid Installation & Esophageal Distension Provoke Bronchoconstriction** *Lyndon E. Mansfield, M.D. presentor* *Nigel J. Smith, M.D.* *Nicholas Glab, M.D.* *Harry S. Spaulding, M.D.* *Peter H. Hameister, M.D.* *co-authors*	**Acute Renal Failure** *Robert W. Schrier, M.D.* *Moderator:* *Wm. W. Bohnert, M.D.*	**Non-invasive Diagnostic Procedures** *David Zunkel, M.D.* *Moderator:* *Neopito L. Robles, M.D.*
4:00 to 4:30	*Moderator:* *Philip Levy, M.D.*	**Penicillamine Re-challenge after Prior Toxicity** *Louis Greco, M.D. presentor* *Benjamin K. Harris, M.D. co-author*	**Renal Transplantation** *Thomas E. Starzl, M.D.* *Moderator:* *Wm. W. Bohnert, M.D.*	
4:30 to 5:00	**The Family in Chronic Illness** *Harold D. Udelman, M.D.* *Donna Lou Udelman, M.A.*	**Experience with Transsphenoidal Micro-Surgery of the Pituitary** *Philip R. Weinstein, M.D.*		**Appropriate and Inappropriate use of Inhalation Therapy in a Hospital Setting** *Thomas L. Petty, M.D.* *Moderator:* *Marvin C. Schneider, M.D.*
7:00 P.M. 8:00 P.M.	Presidents' Reception - North & South Verandas Presidents' Banquet - Grande Ballroom **#F & G**			

Saturday, April 26, 1980

Saturday A.M.	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D
7:00 to 8:45	**Breakfast Panel Presentation:** **Litigation & the Medical Profession** *Betty Jane Anderson, J.D.* *Edward Jacobson, Esq.*			
8:00			Exhibits Open **#A - E**	

	North Court Room #1	North Court Room #2	Grande Ballroom #F	Grande Ballroom #G
9:00 to 9:30	Rehabilitation Seminar **Rehabilitation in a General Medical-Surgical Hospital** *John Aseff, M.D.* *Moderator:* *Richard Burk, M.D.*	**Critical Issues in Coping With Somatizing Patients** *Thomas E. Bittker, M.D.*	**The Treatment of Non-Unions of Bones with Electromagnetic Fields** *John F. Krempen, M.D. presentor* *Jon D. Zolton, M.D.* *Richard A. Silver, M.D.* *Abelardo Sotelo, M.D.* *co-authors* *Moderator:* *William E. Crisp, M.D.*	**Strategies for Managing Difficult Asthma** *Thomas L. Petty, M.D.* *Henry N. Claman, M.D.*

Saturday A.M.	North Court Room #1	North Court Room #2	Grande Ballroom #F	Grande Ballroom #G
9:30 to 10:00	**Rehabilitation of the Cancer Patient** *Myron Laban, M.D.*	**Critical Issues in Coping With Somatizing Patients** *Thomas E. Bittker, M.D.*	**Liver Tumors and the Birth Control Pill** *Donald J. Ziehm, M.D.* *Moderator:* *William E. Crisp, M.D.*	**How do Corticosteroids Work?** *Henry N. Claman, M.D.*
10:00 to 10:30		**Cardiology** *Najam A. Awan, M.D.*	**Sodium Metabolism in the Hypertensive Patient** *William J. Howard, M.D.* *Henry N. Claman, M.D.* *Moderator:* *Marshall B. Block, M.D.*	**Question & Answer Session** *Thomas L. Petty, M.D.* *Moderator:* *Marvin C. Schneider, M.D.*
10:30 to 11:00	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**
11:00 to 11:30	**How to Measure Effectiveness of Rehabilitation** *Stuart I. Holtzman, M.D.*	**T-Cell Immune Deficiency in the Pre-Operative Patient: Incidence & Complications** *Robert R. Karpman, M.D.* *Moderator:* *Wilber C. Voss, M.D.*	**Variants in Rheumatology** *James Steigerwald, M.D.* *Moderator:* *Marvin C. Schneider, M.D.*	**Interaction of Drugs in Hypertension** *Alan S. Nies, M.D.*
11:30 to 12 Noon	**Accreditation of Rehabilitation** *Alan Toppel*	**Q Fever Hepatitis in Arizona** *Charles E. Hoffman, M.D.* *Moderator:* *Robert A. Price, M.D.*	**Chronic Respiratory Diseases in Children** *David S. Pearlman, M.D.* *Moderator:* *W. Scott Chisholm, Jr., M.D.*	**Hyponatremic Disorders** *Robert W. Schrier, M.D.* *Moderator:* *Marshall B. Block, M.D.*
	South Court Room #1 & 2	**North Court Room #1 & 2**	**Grande Ballroom #A, B, C, D, E, F, G**	**Pointe of View #A, B, C, D**
12 Noon to 2:00 P.M.	Arizona Academy of Family Physicians Luncheon - **#1** Arizona Section Chapter American College of OBGYN Luncheon - **#2**			Arizona Society of Physical Medicine and Medical Rehabilitation Luncheon - **#C** Arizona Neurosurgical Society Luncheon - **#D**
Saturday P.M.	**North Court Room #1**	**North Court Room #2**	**Grande Ballroom #F**	**Grande Ballroom #G**
2:00 to 2:30	**Neck & Back Pain Seminar Part 1** **Pain Areas** *Randall Braddom, M.D.* *Moderator:* *Sam Colachis, M.D.*	**Mucormycosis and an Anatomically Designed Orbito-Facial Prosthesis** *Graham B. Kretchman, M.D presentor* *L. Daniel Eaton* *Joe D. Davis* *co-authors* *Moderator:* *Floyd K. Berk, M.D.*	**Teenage Sexuality (Panel)** *Watson A. Bowes, Jr., M.D.* *JM. Sanders, Jr., Lt. Col., MC* *Alayne Yates, M.D.* *Moderator:* *George D. Comerci, M.D.*	**Cardiac Foreign Bodies** *Cecil C. Vaughn, M.D. presentor* *R. Randall Grace, M.D.* *Charles M. Rucker, M.D.* *co-authors*

Saturday, April 26, 1980

Saturday P.M.	North Court Room #1	North Court Room #2	Grande Ballroom #F	Grande Ballroom #G
2:30 to 3:00	**Neck and Back Pain Seminar Part 1** **Pain Areas** *Randall Braddom, M.D.* *Moderator:* *Sam Colachis, M.D.*	**Recent Advances in the Therapy of Coccidioidomycosis** *J. Burr Ross, M.D.* *presentor* *Bernard E. Levine, M.D.* *co-author* *Moderator:* *Floyd K. Berk, M.D.*	**Teenage Sexuality (Panel)** *Watson A. Bowes, Jr., M.D.* *JM Sanders, Jr. Lt. Col., MC* *Alayne Yates, M.D.* *Moderator:* *George D. Comerci, M.D.*	**Update on Coronary Bypass Surgery** *Bruce C. Paton, M.D.* *Moderator:* *Wilber C. Voss, M.D.*
3:00 to 3:30	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhbits**
3:30 to 4:00	**Chronic Pain Management** *Dennis Harris, M.D.*	**Making Delivery Safe for the Fetus** *Watson A. Bowes, Jr., M.D.* *Moderator:* *W. Scott Chisholm, Jr., M.D.*	**Panel on Confidentiality** *Laurence M. Linkner, M.D.* *Robert St. John, M.D.* *Walter Cheifetz, Esq.* *Moderator:* *Thomas E. Bittker, M.D.*	**Consumer & Physician Attitudes Toward Physician Services, Medical Malpractice, and Patients (Panel)** *Donald F. Schaller, M.D.* *Stephen W. Brown, D.B.A.* *Mrs. Donald R. Squire* *Moderator:* *Edward Sattenspiel, M.D.*
4:00 to 4:30		**Urinary Tract Infections In Children** *Ronald Pfister, M.D.* *Moderator:* *W. Scott Chisholm, Jr., M.D.*		
4:30 to 5:00	**Office Management Of Hyperlipidemia** *Brian R. Tulloch, M.D.* *Moderator:* *Robert A. Price, M.D.*	**Toward "Total" Myocardial Revascularization: The Evolution of Methodology and Evaluation of Techniques** *R. Leighton Fisk, M.D.* *Moderator:* *William C. Scott, M.D.*		
7:00 P.M.	ArMPAC Reception and Banquet - South Court Rooms **#1 & 2**			

Sunday, April 27, 1980

Sunday A.M.	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D,
7:00 to 8:45	**Breakfast Panel Presentation:** **National Hospice Movement** *William M. Lamers, Jr. M.D.* *Albert Eckstein, M.D.* *Dorothy Gerrard, R.N.* *Moderator:* *Judith H. Urrea-Robertson, Ph.D., R.N.*			
8:00			Exhibits Open **#A - E**	

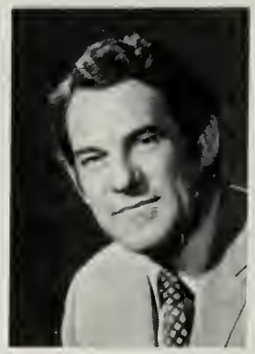
	North Court Room #1	North Court Room #2	Grande Ballroom #F	Grande Ballroom #G
9:00 to 8:45	**Neck & Back Pain Seminar** Part II **Evaluation & Treatment** *Ernest W. Johnson, M.D.* *George Waylonis, M.D.* *Moderator:* *Sam Colachis, M.D.*	**Osteoporosis** *Louis V. Avioli, M.D.*	**Gastric Surgery for Morbid Obesity** *Alan Y. Newhoff, M.D.* *Jerome H. Targovnik, M.D.*	**Spectrum of Systemic Vasculitis** *Henry N. Claman, M.D.*
9:30 to 10:00				**Current Concepts of Breast Cancer** *William A. Robinson, M.D.* *Moderator:* *Neopito L. Robles, M.D.*
10:00 to 10:30		*Moderator:* *Marshall B. Block, M.D.*	**Efficacy of "Shot" Rx in Allergy** *Henry N. Claman, M.D.* *Moderator:* *W. Scott Chisholm, Jr., M.D.*	**Trauma of the Heart and Great Vessels** *Bruce C. Paton, M.D.*
10:30 to 11:00	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**	**Recess - Visit Exhibits**
11:00 to 11:30	**Disability** *John Melvin, M.D.*	**Sexually Transmitted Diseases** *JM Sanders, Jr., Lt. Col., MC*	**Malignant Melanoma** *William A. Robinson, M.D.* *Moderator:* *Suresh C. Anand, M.D.*	**Interaction of Drugs in Cardiac Arrhythmias** *Alan S. Nies, M.D.*
11:30 to 12 Noon		**Treatment of Congenital Skull Abnormalities** *Arden F. Reynolds, M.D.*	**Immunological Aspects of Rheumatoid Arthritis** *James Steigerwald, M.D.* *Moderator:* *Suresh C. Anand, M.D.*	**Breast Cancer: Mammographic Screening** *Marcial M. Ebalo, Jr., M.D.* *Presentor* *P. A. Bennett, M.D.* *M. H. Nathan, M.D.* *co-authors* *Moderator:* *Neopito L. Robles, M.D.*
			Grande Ballroom #A, B, C, D, E, F, G,	
12 Noon			Exhibit Breakdown **#A - E**	



William E. Crisp, M.D.
President



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Clyde W. Kurtz, M.D.
Vice President



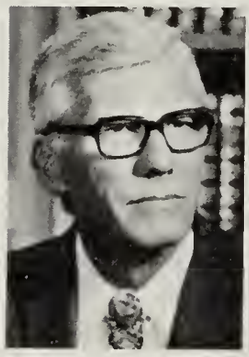
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Marshall B. Block, M.D.
Editor-In-Chief



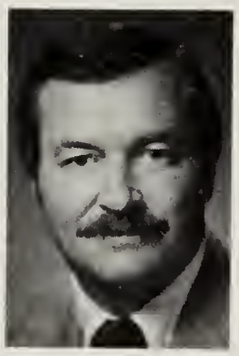
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W. Scott Chisholm, Jr., M.
Delegate to AMA



Daniel T. Cloud, M.D.
AMA Trustee



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John K. Kerr, M.D.
Central District Dir.



Neil O. Ward, M.D.
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Northeastern District Dir.



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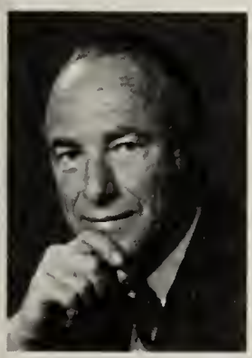
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dward Sattenspiel, M.D.
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Alt. Delegate to AMA



Richard D. Zonis, M.D.
Alt. Delegate to AMA



Rudolf Kirschner, M.D.
Central District Dir.



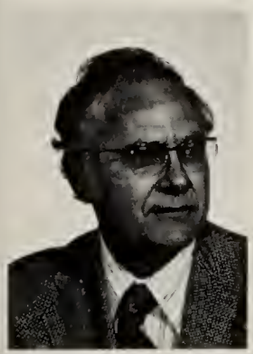
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Central District Dir.



Herbert N. Munhall, M.D.
Central District Dir.



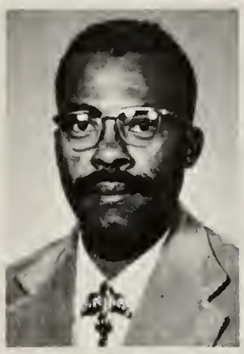
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ichard S. Armstrong, M.D.
Southern District Dir.



Jack M. Layton, M.D.
Southern District Dir.



Joseph S. Whaley, M.D.
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Betty Jane (BJ) Anderson, J.D.
Assistant General Counsel
American Medical Association

John Aseff, M.D.
University of Cincinnati Medical School

Louis V. Avioli, M.D.
Schoenberg Professor of Medicine
Washington University
Director, Division of Bone and Mineral Metabolism
The Jewish Hospital, St. Louis

Najam A. Awan, M.D.
Department of Cardiology
University of California
Davis Medical School

Thomas E. Bittker, M.D.
Phoenix

Watson A. Bowes, Jr., M.D.
Professor of Obstetrics and Gynecology
University of Colorado
Health Sciences Center

Randall Braddom, M.D.
Chairman, Physical Medicine and Rehabilitation
University of Cincinnati Medical School

Stephen W. Brown, D.B.A.
Tempe

Walter Cheifetz, Esq.
Phoenix

Henry N. Claman, M.D.
Professor of Clinical Immunology
University of Colorado
Health Sciences Center

Mrs. Harry S. (Isobel) Dvorsky
First Vice President
American Medical Association Auxiliary
San Leandro, California

Marcial M. Ebalo, Jr., M.D.
Scottsdale

Albert Eckstein, M.D.
Phoenix

R. Leighton Fisk, M.D.
Phoenix

Hoyt D. Gardner, M.D.
President
American Medical Association

Dorothy Gerrard, M.D.
Phoenix

Louis Greco, M.D.
Phoenix

Dennis Harris, M.D.
Medical Director
Pain Control Program
The Center, Mesa Lutheran Hospital

Marilyn Heins, M.D.
Associate Professor of Pediatrics
Associate Dean for Academic Affairs
University of Arizona College of Medicine

Charles E. Hofmann, M.D.
Phoenix

Stuart I. Holtzman, M.D.
Tucson

William James Howard, M.D.
Phoenix

Edward Jacobson, Esq.
Phoenix

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Chairman
Department of Physical Medicine and Rehabilitation
Ohio State University

Robert R. Karpman, M.D.
Tucson

John F. Krempen, M.D.
Tucson

Graham B. Kretchman, M.D.
Phoenix

Robert St. John, M.D.
Phoenix

Robert E. T. Stark, M.D.
Phoenix

Thomas E. Starzl, M.D.
Professor and Chairman
Department of Surgery
University of Colorado
Health Sciences Center

James Steigerwald, M.D.
Associate Professor
Division of Rheumatic Diseases
University of Colorado
Health Sciences Center

William A. Susong, M.D.
Phoenix

Karl E. Sussman, M.D.
Professor of Medicine
University of Colorado
Health Sciences Center
Clinical Investigator
VA Medical Center, Denver

Jerome H. Targovnik, M.D.
Phoenix

Alan Toppel
Commission on Accreditation of Rehabilition Facilities
Tucson

Brian Robert Tulloch, M.D.
Houston, Texas

Donna Lou Udelman, M.A.
Phoenix

Harold D. Udelman, M.D.
Phoenix

Cecil C. Vaughn, M.D.
Phoenix

George Waylonis, M.D.
Chairman
Department of Physical Medicine and Rehabilitation
Riverside Hospital
Columbus, Ohio

Philip R. Weinstein, M.D.
Tucson

Alayne Yates, M.D.
Tucson

Donald J. Ziehm, M.D.
Phoenix

David Zunkel, M.D.
Instructor in Radiology (Ultrasound)
University of Colorado
Health Sciences Center



Guest Speakers

Myron Laban M. D.
Director
Physical Medicine
and Rehabilitation
William Beaumont Health Center
Royal Oak, Michigan

William M. Lamers, Jr., M.D.
Medical Director
Hospice of Marin
San Raphael, California

Laurence M. Linkner, M.D.
Phoenix

Lyndon E. Mansfield, M.D.
Tucson

John Melvin, M.D.
Chairman
Department of Physical Medicine
and Rehabilitation
Curative Workshop of Milwaukee

Alan Yale Newhoff, M.D.
Phoenix

Alan S. Nies, M.D.
Professor of Medicine
Head of Division of Pharmacology
University of Colorado
Health Sciences Center

Bruce C. Paton, M.D.
Professor of Surgery
University of Colorado
Health Sciences Center

David S. Pearlman, M.D.
Clinical Professor of Pediatrics
University of Colorado
Health Sciences Center

Thomas L. Petty, M.D.
Professor of Medicine
Head of Division of
Pulmonary Sciences
University of Colorado
Health Sciences Center

Ronald Pfister, M.D.
Associate Professor of Surgery
Head of Division of Urology
University of Colorado
Health Sciences Center

Andrew J. Presto, III, M.D.
Phoenix

Arden F. Reynolds, M.D.
Tucson

William A. Robinson, M.D.
Professor of Medicine
Chief of Division of
Medical Oncology
University of Colorado
Health Sciences Center

J. Burr Ross, M.D.
Phoenix

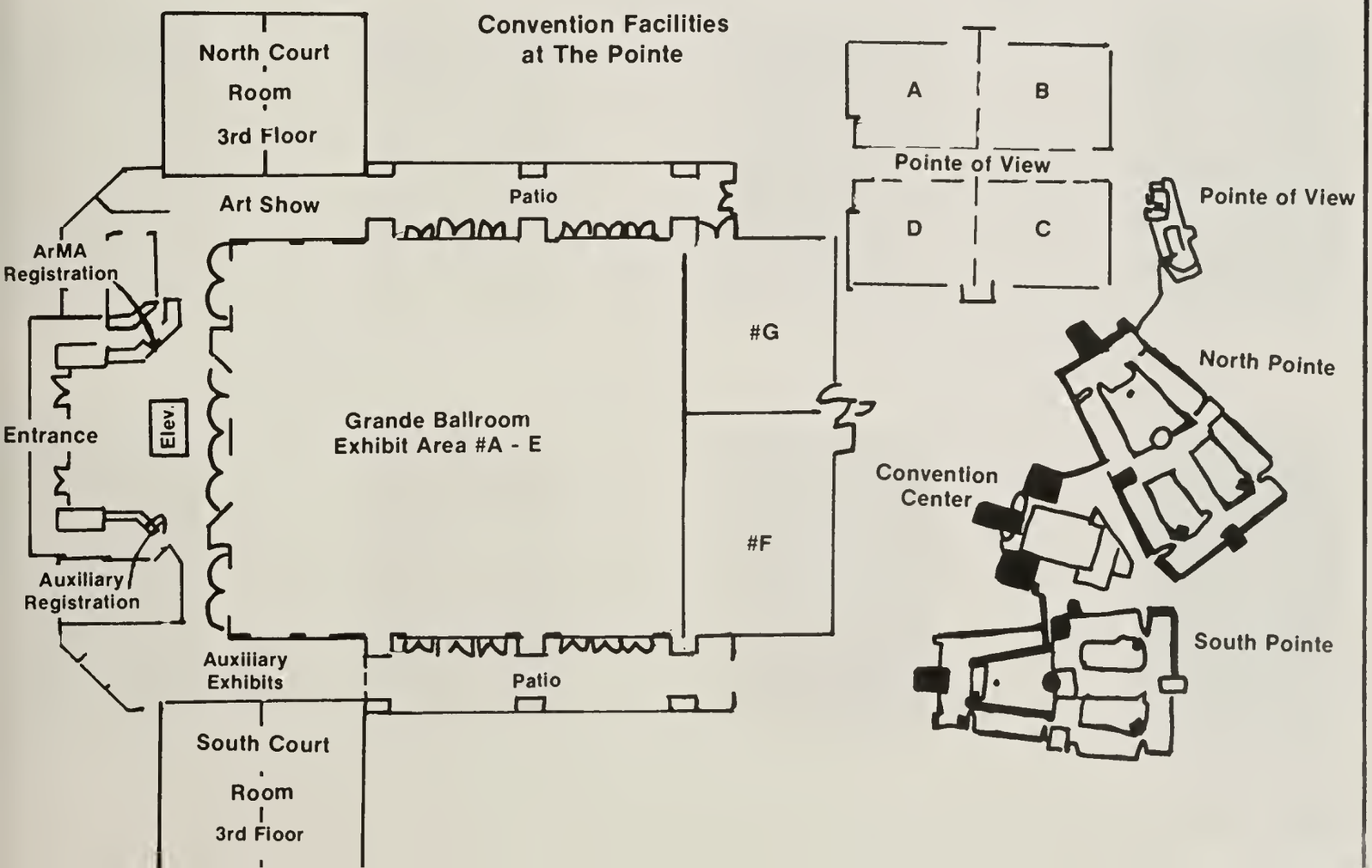
Lt. Col. Joe M. Sanders, Jr., M.C.
Associate Clinical Professor
of Pediatrics
University of Colorado
Health Sciences Center

Robert W. Schrier, M.D.
Professor and Chairman
Department of Medicine
University of Colorado
Health Sciences Center

Donald F. Schaller, M.D.
Phoenix

Volker K.H. Sonntag, M.D.
Phoenix

Mrs. Donald R. (Marty) Squire
Phoenix



ArMA Staff



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Executive Director



Gary L. Barnett
Associate Executive Director



Misty Coumbe
Associate Executive Dire



Kathy Bailey



Joan Bruner



Gayle Elkendler



Emerick Kauzlarich



Harvey Morrison



Press Preston



Beverly Richter



Jan Treistad



Carol Turner



Dianne Viol



Roxanne Weldele

Scientific Assembly Committee

responsible for all annual meeting arrangements



James M. Hurley, M.D., Chairman

Suresh C. Anand, M.D.
Earl J. Baker, M.D.
Floyd K. Berk, M.D.
William W. Bohnert, M.D.
George E. Burdick, M.D.
W. Scott Chisholm, Jr., M.D.
John T. Clymer, M.D.
William E. Crisp, M.D.
Boyden L.Crouch, M.D.
Joseph A. Dupont, M.D.
Timothy R. Harrington, M.D.
Thomas F. Hartley, M.D.
Stuart I. Holtzman, M.D.
Clyde W. Kurtz, M.D.
Eugene Leibsohn, M.D.
Philip Levy, M.D.
Peter Mao, M.D.
Dan Morris, M.D.
M. Herbert Nathan, M.D.
William S. Nevin, M.D.
Alex Newman, M.D.
Charlotte Richards
Neopito L. Robles, M.D.
Marvin C. Schneider, M.D.
Richard A. Silver, M.D.
Donald P. Speer, M.D.
Stephen R. Stein, M.D.
Lawrence Z. Stern, M.D.
Luis S. Tan, M.D.
Jerome H. Targovnik, M.D.
Wilber C. Voss, M.D.
Donald J. Ziehm, M.D.

The Program is approved for fifteen hours of category 1 credit for the Arizona Medical Association Certificate on Continuing Medical Education.

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Program is acceptable for fifteen hours by the American Academy of Family Physicians.

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Seven and one-half hours of category 1 CME credit have been applied for from the American Academy of Physical Medicine and Rehabilitation for the Rehabilitation and Neck and Back Pain Seminars on Saturday and Sunday.

Golf Tournament
Marvin C. Schneider, M.D., Chairman

Six Mile Fun Run
Mrs. Joseph (Helen) Hanss, Chairwoman

Tennis Tournament
Dr. & Mrs. Laurance B. Nilsen, Chairmen

ArMA Auxiliary
Board of Directors
1979-80

Mrs. John T. Clymer (Eloise)
President

Mrs. Lynn David Newman (Joyce)
President-Elect

Mrs. George T. Hoffman (Janet)
First Vice-President

Mrs. Charles W. Davis (Judy)
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Director - 1978-80

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Director - 1979-80

Mrs. John Habra (Carol)
Corresponding Secretary

Mrs. Carl A. Nau, Jr. (Carolyn)
Historian

Mrs. Charles E. Henderson (Nancy)
Parliamentarian

Convention Committee

Mrs. Richard L. Collins (Mary Lee)
Chairman

Mrs. Sergei L. Snegireff (Pat)
Co-chairman

Mrs. R. Leighton Fisk (Maureen)
Registration

Mrs. David Weingart (Ronnie)
Reservations and Finance

Mrs. Stephen Dippe (Gaynelle)
Mrs. Richard Goodell (Sandy)
Hospitality

Mrs. Carmen Brooks (Sandy)
Arts & Crafts Show
"Creative Moments"

Mrs. Suresh C. Anand (Trudy)
Mrs. Donald B. Kunkel (Madge)
Installation Luncheon

Mrs. Joseph L. Reno (Maude)
Gavel Club

Mrs. William Cain (BJ)
Exhibits

Mrs. Joseph Hanss (Helen)
Fun Run

Mrs. Marvin Schneider (Annette)
Photographer

Mrs. Donald A. Davis (Jeanne)
Publicity

Mrs. John T. Clymer (Eloise)
Mrs. Lynn David Newman (Joyce)
Mrs. George T. Hoffman (Janet)
Programing Assistance



Mrs. Lynn David Newman
President
1980-81



Mrs. John T. Clymer
President
1979-80

Convention Co-chairman

Mrs. Richard L. Collins
Mrs. Sergei L. Snegireff

Guest

Mrs. Harry S. Dvorsky
First Vice President
American Medical Association
Auxiliary

ArMA Auxiliary 50th Annual Convention
Program at a Glance

Wednesday, April 23, 198

Wednesday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D
10:00 A.M. to 12 Noon			ArMA House of Delegates 1st Session - **#F & G** ArMA Auxiliary President's Address Mrs. Eloise Clymer	

Thursday, April 24, 198

Thursday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F G	Pointe of View #A, B, C, D
7:00 A.M.	Six Mile Fun Run — Herberger Park #2 — North 20th Street and East Maryland Ave., Phoenix Pre-registration required			
8:00 A.M. to 4:00 P.M.	Registration — Convention Registration Area			
9:00 A.M. to 12 Noon			Physicians' Families Program "Changing Values" **#A - G**	
12 Noon to 4:00 P.M.	Arts & Crafts Show — "Creative Moments" — Set-up — South Registration Area Auxiliary Exhibits Set-up — North Registration Area		Hospitality Set-up Exhibit Area **#A - E**	
12 Noon	Tennis Tournament - Paradise Valley Tennis Club - 6802 E. Northern Ave., Paradise Valley Pre-registration required			
12:30 P.M. to 2:00 P.M.		Physicians' Families Program Informal Luncheon - **#1 & 2**		
2:00 P.M. to 4:30 P.M.				Board Orientation Old & New Board Membe **#B**
7:00 P.M.	Reception & Western Steak Fry - The Mountain Preserve Featuring Hoyt D. Gardner, M.D., President of AMA			

Friday, April 25, 1980

Friday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D
8:00 A.M. to 4:00 P.M.	Registration — Convention Registration Area			
8:00 A.M. to 11:45		*Annual Meeting* *Election of Officers* *"All Auxiliary Members"* conducted by: Mrs. John T. Clymer **#1**		
9:00 A.M. to 4:00 P.M.	*Arts & Crafts Show — "Creative Moments" — South Registration Area* *Auxiliary Exhibits — North Registration Area*		*Hospitality Exhibit Area* **#A - E**	
10:30 A.M. to 12 Noon		Gavel Club Reception **#2**		
11:45 A.M. to 12 Noon	Auxiliary Reception **#1 & 2**			
12:30 P.M.	50th Anniversary Luncheon *Installation of Officers* *Special Guests* conducted by: Mrs. John T. Clymer *Surprises!!* Board Meeting to follow conducted by: Mrs. David Lynn Newman **#1 & 2**			
7:00 P.M.	ArMA & ArMA Auxiliary Presidents' Reception — North and South Verandas Presidents' Banquet — Grande Ballroom **#F & G**			

Saturday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D
7:00 A.M. to 8:45 A.M.	**ArMA Program** **Breakfast Panel Presentation:** **Litigation & the Medical Profession** *Betty Jane Anderson, J.D.* *Edward Jacobson, Esq.* **#1 & 2**			
8:00 A.M. to 12 Noon	Registration — Convention Registration Area			
9:00 A.M. to Noon	Auxiliary Exhibits - North Registration Area			
9:00 A.M. to 4:00 P.M.	Arts & Crafts Show — "Creative Moments" — South Registration Area		Hospitality Exhibit Area **#A - E**	
9:00 A.M. to 10:15 A.M.				**Discovery in Color** Jeanne McDonald Color Consultant **#A & B**
10:30 A.M. to 12 Noon				**What Women Should Know About Finances** *Stephen Happel, Ph.D.* Professor Economics, ASU; *Stephen S. Case, Attorney* Taxation, Estates & Trusts
2:00 P.M. to 3:00 P.M.			**ArMA Program** **Teenage Sexuality (Panel)** *Watson A. Bowes, Jr., M.D* *JM Sanders, Jr., Lt. Col. MC* *Alayne Yates, M.D.* *Moderator:* *George D. Comerci, M.D.* **#F**	
3:30 P.M. to 5:00 P.M.			**ArMA Program** **Consumer & Physician Attitudes Toward Physicians Services, Medical Malpractice, and Patients (Panel)** *Donald F. Schaller, M.D.* *Stephen W. Brown, D.B.A.* *Mrs. Donald R. Squire* *Moderator:* *Edward Sattenspiel, M.D.* **#G**	
7:00 P.M.	ArMPAC Reception and Banquet - South Court Rooms **#1 & 2**			

Sunday	South Court Room #1 & 2	North Court Room #1 & 2	Grande Ballroom #A, B, C, D, E, F, G	Pointe of View #A, B, C, D,
7:00 A.M. to 8:45 A.M.	**ArMA Program** **Breakfast Panel** **Presentation:** **National Hospice Movement** *William M. Lamers, Jr., M.D.* *Albert Eckstein, M.D.* *Dorothy Gerrard, R.N.* *Moderator:* *Judith H. Urrea-Robertson, Ph.D., R.N.* **#1 & 2**			
9:00 A.M. to 12 Noon	Arts & Crafts Show — "Creative Moments" — South Registration Area		Hospitality Exhibit Area **#A - E**	
12 Noon to 1:00 P.M.	Arts & Crafts Show — "Creative Moments" — Pick-up			
12 Noon	Convention Concludes			

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• One Hour Workshops •

• Designed to give Arizona physicians & Auxiliary members practical experience in speaking. •

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• *The 80's will be a DECADE OF DECISION* •

Let us help you be comfortable in discussing issues that are important to you.

Workshop Director:
David L. Reynolds
Professional Communications
Manager, Medical Division
Burroughs Wellcome Co.

Registration is limited — Register early for first choice of times.

List 1st, 2nd and 3rd choice of times

Friday, April 25, 1980

2:00 P.M. _____
3:15 P.M. _____
4:30 P.M. _____

Saturday, April 26, 1980

9:00 A.M. _____
10:15 A.M. _____
11:30 A.M. _____
1:30 P.M. _____
2:45 P.M. _____
4:00 P.M. _____

Registration Fee: $10.00

Name: _____

Address: _____

City: _____ **State:** _____ **Zip** _____

Mail to: Arizona Medical Association, 810 West Bethany Home Road, Phoenix, AZ 85013

— CME & Ce credit applied for. —

ArMA Reports

The minutes appearing in this section have been edited to conserve space. A complete copy of the minutes of any meeting will be mailed to any member requesting them.

Board of Directors

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, January 5, 1980, convened at 10:09 a.m., William E. Crisp, M.D., President and Chairman, presiding.

Auxiliary Activities Report

Mrs. John T. Clymer, President of the ArMA Auxiliary, addressed the members regarding a number of goals which the Auxiliary had set for itself in 1979, the most important of which was to define the many functions and roles of the Auxiliary. Mrs. Clymer advised that, with the help of the Medical School, the Auxiliary had been successful in preparing a slide presentation showing how the AMA-ERF funds are used, and had, likewise, done exceedingly well—especially in Yuma, Mohave and Pima Counties—in their roles as HSA observers, and requested that either she or Mrs. Ruth Ogden be contacted if the Auxiliary should be able to assist in this manner on other committees or boards.

Mrs. Clymer discussed some of the planning for the 1980 Annual Convention, with special emphasis being placed on the continuation of the "Physicians' Families" program, for which Marilyn J. Heins, M.D. would be the primary speaker, with the theme to be "Changing Values," and expressed the hope that the program would receive the same tremendous response from the physicians and their wives as had last year's.

ArMPAC

Articles of Association

Dr. Kahle, chairman of ArMPC, presented to the board for its approval Articles of Association for the Arizona Medical Political Action Committee and, following a lengthy discussion,

It was moved and carried that the Articles of Association of the Arizona Medical Political Action Committee (ArMPAC) as drafted and presented by approved with the following modification: That Article III -**Purposes** - be amended by inclusion of the following language: "To support Legislative efforts to improve medical care in Arizona."

Request for Contribution

The Board received and reviewed the request of ArMPAC for a contribution of $1,500.00 for ArMPAC's Educational Fund for 1981.

It was moved and carried that the request of the Arizona Medical Political Action Committee (ArMPAC) for a $1,500.00 contribution for 1981 to ArMPAC's Educational Fund be referred to the Association's Finance Committee for its review for budgetary purposes and, if approved by such committee, the contribution be automatically granted.

AMPAC/FEC Conciliation Agreement

Conciliation Agreement executed by the American Medical Political Action Committee (AMPAC) and the Federal Election Commission (FEC) on November 14, 1979. *Received.*

Counsel for the Association discussed with the board the intent of the FEC to pursue its action against ArMPAC unless a like agreement was executed and, following lengthy discussion,

It was moved and carried that the Association approve the execution by the Arizona Medical Political Action Committee (ArMPAC) of a Conciliation Agreement with the Federal Election Commission (FEC), following review and approval of that agreement by the Board of Directors of ArMPAC and general counsel for the Association.

Activities Report

Dr. Kahle briefly reported on the financial status of ArMPAC; the contribution by that entity to the campaign of Frank J. DePaoli, Jr., M.D.; and the fact that the speaker for the ArMPAC banquet to be held during the 1980 Annual Convention of the Association would be Representative John J. Rhodes.

Board of Directors

House of Delegates - Reorganization Proposal

The Board reviewed and discussed the November 30, 1979 letter from Richard S. Armstrong, M.D., relative to a reorganization of the ArMA House of Delegates by the inclusion of specialty society participation.

It was moved and carried to refer the matter of a possible reorganization of the House of Delegates of the Arizona Medical Association by the inclusion of specialty society participation to the Articles of Incorporation and Bylaws Committee for its review and consideration of the bylaws change which would be required to bring this into effect.

Board of Medical Examiners

Notification that BOMEX is seeking office space in another location. *Received.*

Appointment of Steven S. Spencer, M.D. to BOMEX for the term of 10-15/79 - 7/1/84. *Received.*

MICA/ArMA Service Agreement

The Board was presented with and considered the newly drafted Service Agreement between the Association and Mutual Insurance Company of Arizona; and, following discussion

It was moved and carried to approve the execution by the President and Secretary of the Arizona Medical Association of the ArMA Service Agreement with Mutual Insurance Company of Arizona, effective January 1, 1980.

Non-Smoking Policy

The Board considered the recent action taken by the Maricopa County Medical Society in passing a resolution to prohibit smoking at all future meetings of its Board of Directors, and discussed at length the taking of similar action for the meetings of the ArMA Board.

It was moved and carried that at all future meetings of the ArMA Board of Directors smoking would be prohibited and in order to carry this action into effect no matches or ashtrays would be placed in the meeting rooms.

Resignation of John A Ash, M.D.

The Board received the resignation of John A. Ash, M.D. as Secretary of the Association date 11/5/79 and, in conjunction therewith, determined that a letter to Dr. Ash expressing the appreciation of the Association for services rendered was in order.

Following this, the Board considered the recommendation by the Maricopa County Medical Society of Earl J. Baker, M.D. to fill the vacancy created by Dr. Ash's resignation and reviewed the Bylaws section relative to the filling of vacancies.

It was moved and carried that Earl J. Baker, M.D., be appointed as Secretary of the Association to fill the vacancy created by the resignation of John A. Ash, M.D.

Unified Membership

The Board reviewed the action taken by the Yavapai County Medical Society on October 2, 1979 relative to unified membership and a lengthy discussion ensued. A two-part motion was made relating to the breaking of the chain between state and national and the conducting of a study relating to the breaking of the chain between county and state, at which point

It was moved and carried to divide the motion and consider each part thereof separate from the other.

Following further discussion,

It was moved and carried that the Board of Directors of the Arizona Medical Association instruct the Articles of

Incorporation and Bylaws Committee to prepare, for presentation to the 1980 meeting of the House of Delegates, a resolution by the ArMA Board of Directors to dissolve the AMA-ArMA unified membership.

It was moved and carried that the Board of Directors of the Arizona Medical Association introduce a second resolution during the 1980 meeting of the House of Delegates proposing that a study and evaluation be done regarding the desireability and implications of maintaining or dissolving the unified membership between county and state.

It was moved and carried that, in view of the action taken by the Association relative to unified membership, the Yavapai County Medical Society be asked to reconsider its action of October 2, 1979.

Executive Committee

Ratification of Minutes

It was moved and carried to approve and ratify the minutes of the meeting of the Executive Committee held on November 16, 1979.

Membership Classification Changes Approved

Maricopa County Medical Society

1. Jeome Andes, M.D. - Associate to Affiliate -Account No Longer Licenesed - Dues Exempt - Effective 8/2/79.
2. Ray O. Bjork, M.D. - Active Over 70 to Associate -Account Retirement - Dues Exempt - Effective 10/5/79.
3. Marie H. Bohn, M.D. - Active to Active Over 70 -Account Age - Dues Exempt - Effective 1/1/80.
4. Francis G. Chermak, M.D. - Active to Active Over 70 - Account Age - Dues Exempt - Effective 1/1/80.
5. Angus J. DePinto, M.D. - Active to Active Over 70 -Account Age - Dues Exempt - Effective 1/1/80.
6. Charles E. Henderson, M.D. - Active to Associate -Account Retirement - Dues Exempt - Effective 1/1/80.
7. Margaret L. Kerr, M.D. - Associate to Affiliate -Account No Longer Licensed - Dues Exempt - Effective 8/2/79.
8. Dermont W. Melick, M.D. - Active to Active over 70 -Account Age - Dues Exempt - Effective 1/1/80.
9. Irving M. Pallin, M.D. - Active to Associate -Account Retirement - Dues Exempt - Effective 1/1/80.
10. Florian R. Rabe, M.D. - Associate to Affiliate -Account No Longer Licensed - Dues Exempt - Effective 8/2/79.
11. James J. Riordan, M.D. - Active to Active over 70 -Age - Dues Exempt - Effective 1/1/80.
12. William Russell, M.D. - Active to Associate - Account Retirement - Dues Exempt - Effective 1/1/80.
13. Lucy Vernetti, M.D. - Active to Associate - Account Retirement - Dues Exempt - Effective 3/1/79 — including repayment of 1979 ArMA dues and requesting repayment of 1979 AMA dues.

Pima County Medical Society

1. Sherwood Burr, M.D. - Active to Associate -Account Retirement - Dues Exempt - Effective 1/1/80.
2. Herbert D. Welsh, M.D. - Active to Associate -Account Retirement - Dues Exempt - Effective 1/80.

Following the approval of the foregoing classification changes the Board discussed the retirement of Charles E. Henderson, M.D., and the consensus was that the Association owed Dr. Henderson an expression of appreciation for his many years of service to ArMA and the medical community.

AMA Delegation

Report of Interim Meeting

Delegation's reports regarding 12/5/79 Interim Meeting of the AMA. *Received.*

Student's Report

Report of Maureen Mangotich regarding AMA Interim Session. *Received.*

Principels of Medical Ethics

The Board considered the recommendations of the AMA relating to the revision of the Principles of Medical Ethics, together with the comment of the Maricopa County Medical Society relative thereto and, following discussion,

It was moved and carried that the AMA's proposed revision of the Principles of Medical Ethics be referred to ArMA's Grievance Committee for review and recommendation to the Board of Directors for consideration at its next scheduled meeting.

Additionally, it was the consensus of the Board that the Association should officially request comment from the Board of Medical Examiners on the proposed revision of the Principles of Medical Ethics.

Nominations for AMA Awards

The Board considered the request from the American Medical Association for nominations for the Sheen, Beaumont and Goldberger Awards and

It was moved and carried that the Association submit to the American Medical Association the name of Glenn M. Friedman, M.D. as it nomination for the Goldberger award for his work in preventive medicine and health risk management.

Nominations for AMA Councils

Although the Board considered the request from the AMA for nominations to its various councils, no nominations were made.

Benevolent and Loan Fund Committee

Letter of thanks dated 11/5/79 from Stephen W. Coom. *Received.*

Legislative Committee

Confirmation of Appointment

It was moved and carried to confirm the appointment of Robert T. Daehler, M.D. as a member of the Legislative Committee for the term 1980-83.

Ratification of Minutes

It was moved and carried to approve and ratify the minutes of the meeting of the Legislative Committee held December 8, 1979.

Maternal & Child Health Care Committee

Dr. Gabel, Executive Director of the Arizona Perinatal Program, presented to the board for its review and consideration a proposal to be presented to the Robert Wood Johnson Foundation for the establishment of an Arizona Perinatal Trust, which, if granted by the Foundation, would enable APP to continue its efforts in perinatal health in Arizona.

It was moved and carried that the Arizona Medical Association support the concept of the Arizona Perinatal Trust as proposed for submission to the Robert Wood Johnson Foundation.

Medical Education Committee

Continued Liaison with the LCCME

The Board considered the recommendations of the Medical Education Committee concerning ArMA's continuing to provide accreditation information to the Liaison Committee on Continuing Medical Education and took the following action:

It was moved and carried that the Arizona Medical Association would furnish no accreditation information directly to the Liaison Committee on Continuing Medical Education, nor would it grant permission for the LCCME to receive any such information from records of the American Medical Association.

National Council of State Committees of Continuing Medical Education.

The Board considered the recommendation of the Medical Education Committee regarding membership in the National Council of State Committees of Continuing Medical Education and

It was moved and carried that the Arizona Medical Association accept the recommendation of its Medical Education Committee that membership in the National Council of State Committees of Continuing Medical Education be discontinued.

College of Medicine Admissions Committee

The Board received the recommendation of the Medical Education Committee that request be made for

appointment of an ArMA representative to the Admissions Committee of the University of Arizona College of Medicine and, following discussion,

It was moved and carried that consideration of requesting appointment of an ArMA representative to the Admission Committee of the University of Arizona be tabled.

Confirmation of Appointment

It was moved and carried to confirm the appointment of Thomas E. Vorpahl, M.D. as a member of the Medical Education Committee for the term 1980-83.

CME Accreditations

Accreditations granted to the Arizona Division, American Cancer Society, Walter O. Boswell Hospital and Health Maintenance Associates. *Received.*

Non-Compliance with CME Requirements

The Board considered the action of the Medical Education Committee taken during its meeting on November 8, 1979 and, following discussion of the matter,

It was moved and carried that Daniel Bright, M.D., Anthea Crowdes-Dixon, M.D., John L. Kallmeyer, M.D. and George S. Novalis, M.D. be dropped from membership in the Arizona Medical Association due to non-compliance with the continuing medical education requirement for membership, effective December 31, 1979.

Lengthy discussion ensued regarding the present CME requirements of ArMA and inconsistency with the CME requirements of the Board of Medical Examiners and

It was moved and carried to refer the matter of the present continuing medical education requirements of the Arizona Medical Association to the Articles of Incorporation and Bylaws Commitee for its review and request such committee, in consultation with the Medical Education Committee, to consider the possibility of bringing ArMA's CME requirements into conformity with those of the Board of Medical Examiners.

Physician Rehabilitation Committee

State Law and the Impaired Physician

Thomas E. Bittker, M.D., Chairman of the Physician Rehabilitation Committee, presented to the Board the recommendation of that committee relating to the changes in the state law which would exempt obligatory reporting of the impaired physician. After much discussion, the Board took the following action:

It was moved and carried that the recommendation of the Physician Rehabilitation Committee relating to changes in the state law which would exempt obligatory reporting of the impaired physician be referred to the Legislative and Grievance Commitees of this association for study and report back to the Board of Directors.

Health Insurance

Dr. Bittker discussed with the Board the recommendation of the Physician Rehabilitation Committee that the Association adopt a position regarding the availability and need for mental health insurance coverage for physicians and their families.

It was moved and carried that the recommendations of the Physician Rehabilitation Committee regarding adoption by the Association of a position relative to mental health Insurance coverage be referred to the Medical Economics Committee for investigation, study and report back to the Board of Directors.

Scientific Assembly Committee

1982 Annual Meeting Dates

The recommendation of the Scientific Assembly Committee made in meeting on December 15, 1979, was presented to the Board for its consideration and, in finding that increasing costs were a major concern for attendees of annual meetings of the Association.

It was moved and carried to accept the recommendation of the Scientific Assembly Committee that the dates of the Annual Meeting of the Association in 1982 be changed, at the discretion of that Committee, to conform to the hotel "off-season" in the Phoenix area.

Correspondence

Letter dated 12/6/79 from John R. Young, M.D. as President of the Mohave County Medical Society. *Received.*

Other Business

Western Physicians Purchasing Association

John F. Kahle, M.D., President of the WPPA, reported to the Board on the present status of the WPPA, discussing some of the problems which have arisen, solutions arrived at and the 1980 membership of that organization. Dr. Kahle requested that the Board again consider the request of the Arizona Podiatry Association for its members to be granted participation in the Western Physicians Purchasing Association and, additionally, consider the same action relating to the Arizona Osteopathic Medical Association.

It was moved and carried to approve, for associate membership in the Western Physicians Purchasing Association, members of the Arizona Podiatry Association and of the Arizona Osteopathic Medical Association.

National Center for State Courts

Letter dated 12/21/79 from Edward Sattenspiel, M.D., Chairman of the Ad Hoc Malpractice Insurance Crisis Committee relating to a proposal by the National Center for State Courts to evaluate medical liability review panels in Arizona. *Received.*

Professional Committee

Meeting of the Professional Committee of the Arizona Medical Association held January 15, 1980 at 810 West Bethany Home Road, Phoenix convened at 7:00 p.m., Joseph W. Hanss, Jr., M.D., Chairman, presiding.

New Members

The Chairman welcomed the new Committee members, Sheldon Marks and Del Worthington, medical students from the University of Arizona.

Section on Aging and General Medicine

Health Hazard Appraisal

Processing Management Systems Corporation has requested input from the Association regarding introduction of their "health hazard appraisal program" to the local medical community. The concept of the program is as a comprehensive health risk identifier to complement on-going physical examinations, or complete health surveys, identifying those risks which the patient himself can control through behavior modification. The appraisal is not intended to be a diagnostic tool, but serve as an identifier of those habits the patient exhibits which directly affect his longevity and the quality of his life. There was discussion.

It was moved and carried to table the issue of the health hazard appraisal program offered by Processing Management Systems Corporation.

Determination of Death in Nursing Homes

Dr. Hagan reported that when a person expires in a nursing home, a physician must pronounce the patient dead as well as sign the death certificate. This can cause additional financial burden on the deceased's family if the deceased must be transported to an emergency room to have a physician pronounce death. The physician who is called at off hours to report to the nursing home only to pronounce death may also be inconvenienced. There was discussion of how some communities are dealing with this problem. It was noted that the Arizona Department of Health Services is looking at the problem.

It was moved and carried that the Professional Committee work with the Department of Health Services in alleviating problems involved in determining death in nursing homes.

Definition of Death

The Committee received "Model Legislation to Provide for Determination of Death" developed by the American Medical Association for consideration. Also received was a copy of the Arizona Supreme Court's recent ruling holding that brain death constitutes death in this state. The AMA model legislation would

support the Supreme Court's ruling but would expand it to provide that physicians might employ medically recognized procedures and criteria other than brain death in the determination of death. Considerable discussion ensued.

It was moved and carried to recommend to the Board of Directors adoption of the American Medical Association's model state legislation to provide for determination of death and further, to submit it in resolution form to the Arizona Medical Association House of Delegates during the 1980 Annual Meeting.

Section on Emergency Care and Disaster Medicine

Center Against Sexual Assault

The Committee received a letter from the Center Against Sexual Assault outlining problems faced by rape victims and their belief that legislation may be necessary to assure treatment for all victims of sexual assault at all licensed, recognized medical facilities in the state of Arizona. Committee members discussed the programs for dealing with sexual assault victims in Maricopa and Pima Counties and agreed that these programs are working very satisfactorily.

It was moved and carried to reply by letter to the Center Against Sexual Assault informing them of the existing programs for treatment of sexual assault victims in Arizona.

Section on Allied Medical Groups

Position Papers

The Committee received position papers developed by the Health Manpower Committee, and approved by the Board of Directors on the subjects of Chiropractic, Naturopathy, Nurse Practitioner and Podiatry. It was noted that these position papers are being used in the legislative activity. *Received for information.*

Section on Health Education

ArMA Auxiliary's Health Education Program

Dr. Niccum reported that the Auxiliary is sponsoring a program developed by the American Cancer Society to provide all Arizona schools with a kit for health care education at kindergarten through third grade levels. The kit includes filmstrips, music, posters and activities to carry out the teaching objectives. The Auxiliary is endeavoring to raise the necessary $7,000 to fund the program, however may need to seek financial assistance from ArMA.

It was moved and carried to recommend to the Board of Directors endorsement of the Auxiliary's program in health education and to assist the Auxiliary in funding if needed.

Section on Medicine and Religion

Catholic Physicians Guild of Phoenix Symposium

Dr. Hanss reported on the Catholic Physicians Guild of Phoenix Symposium held November 3, 1979, for about twenty religious leaders from around Arizona. The program was a great success and held to give religious leaders a broad base regarding health care form which to speak to their congregations and possibly the Legislature if desired.

Received for information.

Section on Poison Control

Poison and Drug Information Center

Dr. Kunkel reported that legislation has been introduced again this year to establish a poison and drug information center located at and affiliated with the University of Arizona under the direction of the Arizona Deaprtment of Health Services. The proposed legislation provides for regional programs throughout the state established in conjunction with DHS and regional emergency medical services systems. In discussing the proposed legislation, Committee members expressed concern over the wording in line 11-13 on page one and line 3 on page two which provide for management of the patient.

It was moved and carried to recommend to the Legislative Committee support of the concept of establishing a poison and drug information center in Arizona. The Committee wishes, however, to express concern about the legislation providing for management of the poisoned person found on lines 11-13 on page one and line 3 on page two.

Section on Public Health

Automated Blood Pressure Recorders

The Committee received correspondence from the Director, Department of Health Services, informing them that the recommended modifications to the Vita-Stat automated blood pressure recorders will not be made, however a conspicuous warning will be dispalyed on the face of the units alerting the user to the equipment's limitations.

Recieved for information.

Communicable Disease Regulations - Rubella Immunity

The Committee received correspondence from the Arizona Hospital Association regarding revised communicable disease regulations with respect to rubella immunity. These regulations will required that clinic and hosptial employees who provide direct care or services to rubella patients, pediatric patients and pregnant patients will be required to prove rubella immunity. These regulations become effective July 1, 1980. While the Committee recognized the value of such regulations it was the concensus that these regulations would be very difficult to implement. Staff was directed to request from the Department of Health Services the intent of the regulations and further information.

Syphilis - Gonorrhea Morbidity Study

The Department of Health Services has requested input from the Association on a planned study of the incidence of syphilis and gonorrhea in Arizona. The committee was asked to review a questionnaire and provide suggestions as to its content and possible means of dissemination. There was considerble discussion. Staff was directed to respond suggesting dissemination using the Board of Medical Examiner's mailing list. No comment on the questionnaire will be provided.

Section on Safety

Child Passenger Restraints in Automobiles

Dr. Pullen informed the Committee of legislation that will hopefully be introduced during the current legislative session providing that children under the age of four must be properly placed in a child passenger restraint system while riding in a motor vehicle. It was noted that the Legislative Committee supports passage of this legislation.

It was moved and carried to recommend to the Board of Directors support of legislation which would require that children under the age of four be properly placed in a child passenger restraint system while riding in a motor vehicle.

Section on Sports Medicine

Sports Medicine Symposium

It was noted that the Sixth Annual Sports Medicine Symposium will be held on May 3-4, 1980 at the Adams Hotel in Phoenix. *Received for information.*

Preparticipation Physicals

The Committee received letter by William C. Brainard, M.D., Chairman of the Section on Sports Medicine, to Mr. Tony Komadina of the Arizona Interscholastic Association stating the position of the Section on Sports Medicine on preparticipation sports physicals. *Received for information.*

Correspondence

Section On Cancer

The Chairman advised the committee of the Board of Directors approval of the committee's recommendation to dissolve the Section on Cancer.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

Arizona Chapter, American Cancer Society
Arizona Heart Institute
Arizona Medical Association
Arizona State Hospital, Phoenix
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates, Phoenix
Maricopa County General Hospital, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
Phoenix Psychiatric Council
St. Joseph's Hospital & Medical Center, Phoenix
St. Lukes's Hospital & Medical Center, Phoenix
St.Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

MARCH

The Care of The Acute Spinal Cord Injured
March 15, St Joseph's Hospital and Medical Center, Cullen Auditorium, 350 W. Thomas Rd., Phoenix. Sponsor: St. Joseph's Hospital & Medical Center, Barrow Neurological Institute, Good Samaritan Hospital, Sou thwest Regional System for Treatment of Spinal Cord Injury. Contact: Volker K.H. Sonntag, M.D., Barrow Neurological Institute St. Joseph's Hospital & Medical Center. Approved for 6 hours of category 1 CME credit; approval pending for 6 contact hours for nurses.

6th Annual MCGH Urological Seminar
March 15-16, Doubletree Inn, Scottsdale, AZ, Sponsor: Maricopa County General Hospital. Contact: CME office MCGH, 2601 E. Roosevelt, Phoenix, AZ. Approved for 16 hours of category 1 credit.

Bilateral Renal Agenesis
March 20, Williams Air Force Base, Hospital Conf. Rm.,. Contact: USAF Manpower & Personnel Center, Surgeon's Office. Approved of 1 hour of category 1 credit.

Frontiers In Cardiovascular Disease
March 20-22, La Posada Resort, Scottsdale, Az. Sponsor: St. Luke's Hospital and Medical Center. Contact: Office of CME, St. Luke's Hospital & Medical Center, 525 N. 18th St., Phoenix, AZ 85006. Aproved for 21 hours of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
March 21-22, Arizona Medical Association offices, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Sponsor: ACEP, Arizona Affiliate American Heart Assn & ArMA. Contact: Carol Turner, ArMA, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Aging, Hyperglycemia and Diabetes
March 27, Townehouse Hotel, 100 W. Clarendon, Phoenix, AZ. Sponsor: Arizona Affiliate of the American Diabetes Association and Good Samaritan Hospital, Dept. of Medicine. Contact: George F. Stoeberl, American Diabetes Association, Arizona Affiliate, Inc., 555 W. Catalina Drive, Phoenix, AZ 85013. Approved for 4 hours of category 1 CME credit.

Clinical Recognition & Managment of Heart Disease
March 27-29, Arizona Health Sciences Center, Tucson, Az, Sponsor: U. of A. College of Medicine & American College of Physicians. Contact: Office of CME & Outreach, U. of A. Health Sciences Center, Tucson, AZ 85724. Approved for 18½ hours of category 1 credit.

Gynecologic Endocrinoloyg
March 28-30, Hyatt Regency Hotel, Tucson, AZ. Sponsor: U of A Tucson, AZ. Contact: Office of CME & Outreach, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 16 hours of category 1 credit.

1980 Arizona Chest Symposium
March 28-30, 1980. Doubletree Inn, Tucson, Arizona. Sponsor: University of Arizona College of Medicine, and Tucson Medical Center. Contact: Linda Alpert, R.N., Symposium Coordinator, Tucson Medical Center, P.O. Box 6067, Tucson, AZ 85733. Approved for 16 hours of category 1 credit.

Understanding Arthritis
March 30, Arizona Biltmore, Phoenix, AZ. Sponsor: Am. Society of Clinical Rhuematology, & St. Luke's Hospital & Medical Center. Contact: CME office St. Luke's Hospital & Medical Center, 525 N. 18th St., Phoenix, AZ 85006. Approved for cagetory 1 credit.

APRIL

Treatment of Common Eye Disorders
April 3, Williams Air Force Base, Hospital Conference Room. Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon s Office. Approved for 1 hour of category 1 credit

Emergency Room Radiology
April 11-13, 1980. Arizona Biltmore, Phoenix, Arizona. Sponsor: Maricopa County General Hospital. Contact: Austin R. Sandrock, M.D., Program Chairman, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Occupational Medicine for the Practicing Physician - Part II
April 12, The Adams Hotel, Phoenix, Arizona. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, UAHSC, Tucson, AZ 85724. Approved for 7 hours of category 1 credit.

Vectorcardiography - Basic Workshop
April 16-18, Hilton Hotel, Scottsdale, Arizona. Sponsor: Good Samaritan Hospital & American College of Cardiology. Contact: Good Samaritan Hospital, CME office, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 16 hours of category 1 credit.

5th Annual Update Primary Care
April 16-19, Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 25 hours of category 1 credit.

Chronic Obstructive Pulmonary Disease
April 17, Williams Air Force Base, Hospital Conf. Rm., Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon's Office. Approved for 1 hour of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
April 18-19, Arizona Medical Association, 810 W. Bethany Home Road, Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate-American Heart Assn. & ArMA. Contact: Carol Turner, Arizona Medical Assn. Approved for 16 hours of category 1 credit.

Infectious Diseases for the Practicing Physicians
April 19, Good Samaritan Hospital, Education Bldg., Phoenix, Arizona. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 7 hours of category 1 credit.

1980 Third Annual Arizona Emergency Medicine Symposium
April 23-25, 1980, Safari Resort, Scottsdale, Arizona. Sponsors: Arizona Emergency Medical Systems, Inc.; Arizona Chapt Am. College of Emergency Physicians, Arizona Chap. of Emergency Dept. Nurses, Assoc., Arizona Paramedic Cont. Educ. Program. Contact: Jennie Johnston, Symposium Coordinator. 301 W. Osborn Rd., Ste 112, Phoenix, AZ. 85013.

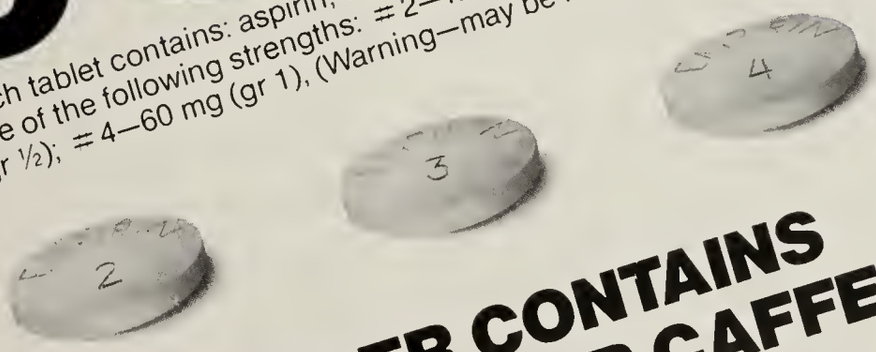
Arizona Medical Association 89th Annual Meeting
April 23-27. The Pointe Resort, Phoenix, AZ. Sponsor: The Arizona Medical Association, Inc. Contact: Bruce E. Robinson, Executive Dir., ArMA, 810 W. Bethany Home Road, Phoenix, AZ 85013. Approved for category 1 credit.

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April 25-27, Doubletree Inn, Scottsdale AZ. Sponsor: Good Samaritan Hosptial. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 10 hours of category 1 credit.

MAY

The Pursuit of Wellness
May 2-4, 1980. University of California, San Francisco. Sponsor: Univ. of California, San Francisco, Health Promotion office of the State Dept. of Mental Health, Institute of Noetic Sciences. Contact: Univ. of California, Continuing Education Health Sciences, 1308 3rd Ave., San Francisco, CA 94143. CME credit available.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Edward B. Diethrich, M.D., Medical Dir.

Clinical Conference Cardiovascular Medicine
Third Tues., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.
Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists
Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.

Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucosn, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.

Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.
Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm
Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.
Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.
Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.
Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North
Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.
Pediatric Grand Rounds
3rd. Tuesday, 7:30-8:30 A.M., Contact: Paul Bergeson, M.D.
Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.
Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.
Dr. Finger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.
Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.

OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.
PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.
Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.
GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.
Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora
Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.
Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology
Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.
Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.
Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.
Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.
Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.
PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.
Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman
Nephrology Conference
1st Monday, 12:30 P.M., Contact: Alan Cohn, M.D.
Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.
Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.
Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.
Gynecology Conference
5th Tuesday, 12:30 P.M., Contact: J. Wurzel, M.D.
Neurology Conference
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.
Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.
Clinical Pharmacology
4th Wed., 12:30 P.M., Contact L. Gardner, Pharm. D.
Clinical Pathology Conference
2nd Wed., 12:30 P.M., Contact: J. Fleishman, M.D.
Medical Conference - Mortality/Morbidity
3rd Wed., 12:30 P.M., Contact: J. Goldberger, M.D.
Rheumatology Conference
1st Wed, 12:30 P.M., Contact: J. Goldberger, M.D.
Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.
Clinical Correlation
3rd Thursday, 12:30 P.M., Contact: J. Goldberger, M.D.
Endocrine Conference
2nd Thurdsday, 12:30 P.M., Contact E. Munjack, M.D.
OB/GYN Dept. Meeting
2nd Thurday, 2 P.M., Contact J. Wurzel, M.D.
GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.
OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel, M.D.
Chest Conference
2nd & 4th Fridays, 12:30 P.M., Contact: D. Engelsberg, M.D.
Dermatology Conference
3rd Friday, 12:30 P.M., Contact: P. Lynch, M.D.
Hematology Conference
1st Friday, 12:30 P.M., Contact: S. Ketchel, M.D.
Medical Conference
5th Friday, 12:30 P.M., Contact: J. Goldberger, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

1MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Steven Schaffner, M.D.

Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.
Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.
Hepatology Conference
2nd Tuesday, 1:00 P.M., Contact: Walt Koppenbrink, M.D.
OB/GYN Dept. Grand Rounds
Weekly Tuesday, 12 Noon, Santa Cruz Room
Obstetrical Problem Conference
Weekly Tuesday, 7:15 A.M., Yavapai Rm.
Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.
Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.,Contact: Robert Ganelin, M.D.
Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42
Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.
Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.
OB/Pernatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.
OB/Neonatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.
Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.
Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.
Cardiology Conference
Weekly Thurs., 2 P.M., Santa Cruz Rm.
OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.
GYN Endocrine Seminar
1st Friday, 12:30 P.M., Sanata Cruz Rm.
GYN Grand Rounds
Weekly Friday, 1:30 P.M., Sanat Cruz Rm.
OB/GYN Surgical Pathology Conf.
Weekly Friday, 7 A.M., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.

Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon
OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.
Clinical Staff Teaching Conference, Rm. A.
Wed. Weekly, 8:00 A.M.
Family Practice/Emergency Room Teaching Conference
Thursday Weekly, 7:30-8:30 A.M., Conf. Rm. A, Contact: Drs. L. Moher & L. Fairbanks.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.
Tumor Board Conference
Weekly Friday, 12 P.M., Kiva Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for category 1 credit.

Family Practice Conference
1st Monday, 12:30 P.M., Doctors' Lounge
Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge
Neurology & Neurosurgery Conference
3rd Monday, 12:30 P.M., Doctors' Lounge
Internal Medicine-Clinical Pathological Conference
4th Monday, 12:30 P.M., Doctors' Lounge
Pulmonary Medicine Conference
1st Tuesday, 12:30 P.M., Doctors' Lounge

Cardiology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge
Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge
Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
Cardiolpulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
OB/GYN Dept. Meeting & Conf.
2nd Wed., 12:30 P.M., Doctors' Lounge
Trauma Conference
3rd Thurs, 12:30 P.M., Doctors' Lounge
Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge
Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge
GI Medical—Surgical Rdiological Conf.
2nd Friday, 12:30 P.M., Doctors' Lounge
Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mon., 12:30-1:30 P.M., 1st Flr. Conf. Rm.
Medical Grand Rounds
Weekly Wed., 8 A.M., 1st Flr. Conf. Rm.
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 AM, Contact: J. K. Charlton, M.D.
Monthly Specialty Conf.-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med.Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday.
Cardiology Conference
Weekly Friday, 8-9 A.M. Century Rm., Contact: Anthony Forte, M.D.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday
Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly Monday, except last, 12 Noon, Contact: J. Fernadez, M.D.
Dermatology Conference
4th Monday, 5:15 P.M., Contact: R. Friedman, M.D.
Perinatal Conference
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.
Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.
Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact: L. Mann, M.D.
Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.
Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.
Family Practice Meeting
2nd Wednesday, 12:30 P.M., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.
Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.
Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.
Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.
Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.
Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.
Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.
Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.
OBGYN Pathology Conference
Weekly Thursday, except 2nd, 2:00 P.M., Contact: J. Wurzel, M.D.
Surgical Literature Course
2nd Thursday, 7:00 P.M., Contact: P. Whitney, M.D.
Tumor Conference
Weekly Thursday, 12 Noon.
G—I Conference
Weekly Friday, 12 P.M., Contact: C. Krone, M.D.
Inter-Hospital Medicine Conference
Weekly Friday, 7:15 P.M., Contact: S.V. Hilts, M.D.
OBGYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.
OBGYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.
Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403
Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.
Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact: Drs. Otto & Zehngut.
Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 P.M., HSC Auditorium, Contact: Cancer Center
Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.
Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez
Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.
Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn
Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore
Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.
Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.
Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.
Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch
Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson
GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus
GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter
Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning
Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Room 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.
Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.
Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn
Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern
Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.
Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson
Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.
Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.
Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford
Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room

Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross
Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross
Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann
Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.
Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.
Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley
Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs
Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson
Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones
Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.
Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.
Psychiatric Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. R. Cutts
Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital
Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.
Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson
Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655
Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich
Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.
Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C. **Uroradiology (Genitourinary Radiology)**
2nd & 4th Mondays, 7:30- 8:30 A.M., AHSC, Contact: Dept. of Radiology
Renal Pathology Conference
1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.
Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Rm.
Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.
Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.
Trauma Conference
Every Thursday,4-5 p.m. UAHSC, Rm. 5505.
Ward Grand Rounds - Trauma
Weekly Tuesday, 8:00 A.M., Contact: Dr. M. Silverstein.
Toxicology Conference
Weekly Tuesday, 8:00 A.M., Contact: Dr. Keith Likes
Section.
Tucson Ultrasonography Group
Weekly Wed., 4:30 P.M., AHSC, Contact: Dr. I. Freundlich.
General Urology Conference
Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heibrumn, M.D. Approved for Category 1 credit.

GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.
Medical/Surgical GI Conference
1st & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Surgical X-Ray Conf. & Bedside Teacking Rounds
Weekly Monday, 4 P.M., RM. 3134, Contact: Dr. Mertz, Ext 493.
1st, 2nd & 3rd Wed., 10 A.M. - C118, Contact: Dr. Roberts, Ext. 426.
Surgery/Pathology Conf. & Tissue Review
1st & 3rd Tuesday, 4 P.M., RM. 2128, Contact: Dr. Likos & Dr. Mertz.
Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., T-5, Contact: Drs. Sanowski & Schaffner
Dermatology Conference
1st, 2nd, 3rd Wednesday, Rm. C-118, Contact: Dr. Roberts, Ext. 674.
Cancer Symposium
Weekly Wed., 1 P.M., T-5, Contact: Dr. Byrne, Ext. 426.
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wed,'., 4 P.M., Rm 3134. Contact: Dr. Mertz, Ext. 493.
Medical Surgical Chest Conference
1st & 3rd Thursday, Contact: Dr. Rohwedder or Dr. Gil.
Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5.
Gastrointestinal Rounds
Weekly Thursday, 1 P.M., Rm. D-446.
Surgery-Pathology Conference
Weekly Thursday, 2 P.M., Room 2128
Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller
GI Resident Conference
Weekly 1 P.M., Room D-446.
Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for category 1 credit.

G.I. Rounds
Monthly Wed., 10-12 Noon, Contact: Drs. Kozareck & Fellows.
Medical Lectures
Weekly Thursday & Friday, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.

TUCSON VETERANS ADMINISTRATION MEDICAL CENTER

3601 South Sixty Ave., Tucson, AZ 85723. Contacts listed below. Approved for category 1 credit.
Medical Surgical Chest Conference
Weekly Tuesday, 2 P.M., Contact: Dr. Young
Medical Grand Rounds
Weekly Wed., 12-1:00 P.M., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. Putnam
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 P.M., Rm. N318, Contact: Dept. of Internal Medicine.
Vascular Radiology, Interesting Case Conf.
Weekly Thursday, 12:00 Noon.
Neurology Grand Rounds
Weekly Friday, 12 P.M., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:Alan Winfield, M.D. Approved for category 1 credit.

Radiology Conference
1st Tuesday, 7:00 A.M.
Operation Outreach
2nd Tuesday, 6:30 P.M.
Pathology Conference
4th Tuesday, 7:00 A.M.
Operation Outreach
2nd Wednesday, 7:00 A.M.

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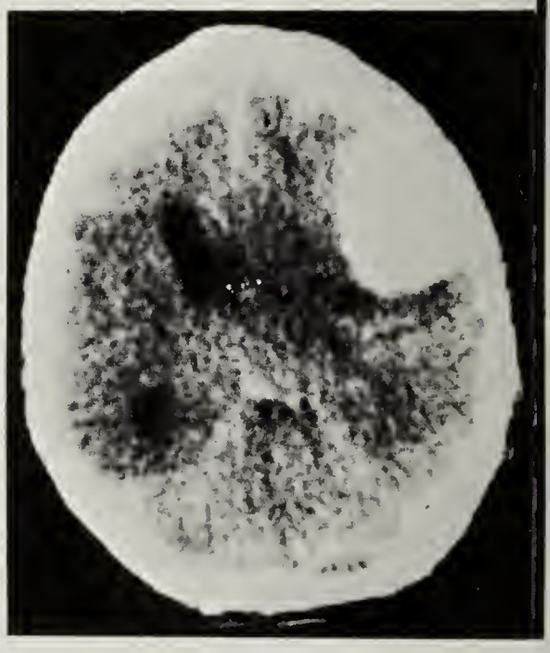
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WALTER J. BROWN, M.D.
JOHN B. FOX, M.D.
ALFRED J. DELLA ROCCA, M.D.
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ROBERT S. WALDMAN, M.D.



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Dates and Locations

San Diego February 16 and 17, 1980, Sheraton-Harbor Island, 1380 Harbor Island Drive, San Diego, California 92199, (714) 291-2900

San Francisco March 1 and 2, 1980, Holiday Inn - Fisherman's Wharf, 1300 Columbus Avenue, San Francisco, California 94133, (415) 771-9000, Holidex Number 2458

Santa Barbara March 8 and 9, 1980, Santa Barbara Biltmore, 1260 Channel Drive, Santa Barbara, California 93108, (805) 969-2261

Phoenix, Arizona March 22 and 23, 1980, Camelback Inn, Scottsdale, 5402 East Lincoln Drive, Scottsdale, Arizona 85252, (602) 948-1700

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Leland Yeoman, D.D.S.
Successful, multi-million dollar real estate investor and practicing dentist.

Dennis Peterson
Real Estate Broker, Investment Consultant
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REGISTRATION FORM

Mail this registration form with check ☐ money order ☐ or your Mastercharge or BankAmericard Number _____ to: Santa Barbara Seminars, Post Office Box 899, Summerland, California 93067

Name _____ Address _____

City _____ State _____ Zip _____

Indicate number of attendees and which day or days they plan to attend.

First Day - Number of People _____ Second Day - Number of People _____

Names: _____ Names: _____

_____ _____

_____ _____

Choice of Seminar Dates and Locations _____

Signature: _____

NOTE: Participants responsible for their own hotel reservations. Call early.

89th Annual Meeting of the Arizona Medical Association, Inc.

50th Annual Meeting of the ArMA Auxiliary

The Pointe Resort, Phoenix, AZ

April 23-27, 1980

• **Business Meetings** •
Board of Directors Meetings
Executive Committee Meetings
House of Delegates Sessions 1 & 2
(Hoyt D. Gardner, M. D. President AMA will address 2nd Session)
Maricopa County Caucus
Pima County Caucus
Reference Committees

• **Scientific Sessions** •
Guest Faculty from the University of Colorado Health Sciences Center
61 Different Presentations
PM & R Scientific Sessions
Scientific Exhibits
Breakfast Panel Programs
Physicians' Families Program



• **Luncheons** •
ArMA Auxiliary
Past Presidents' Luncheon
Specialty Society Luncheons

• **Fun Time** •
Golf & Tennis Tournaments
Six Mile Fun Run
Western Steak Fry
Presidents' Banquet
ArMPAC Banquet
Arts & Crafts Show

ARIZONA MEDICAL ASSOCIATION AUXILIARY

CREATIVE MOMENTS '80



ARTS & CRAFTS SHOW APPLICATION

INSTRUCTIONS:

1. **Complete form and mail to:**
 Mrs. Sandy Brooks
 6540 E. Ironwood Drive
 Paradise Valley, AZ 85253

2. **Entries are limited to:**
 Adults Three per person.
 Youth (*13 years through 17 years*) Two per person.
 Child (*12 years and under*) Two per person.

3. **Deliver entries for display to:**
 The Pointe Resort Grande Ballroom, 7677 N. 16th Street, Phoenix, starting at 12 Noon on Thursday April 24, 1980.
 Items will be on display Friday, Saturday and Sunday until noon (April 27, 1980.)

4. **Entries MUST be picked up between 12 Noon and 1 P.M. on Sunday April 27, 1980.**

.....

Registration Form:

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INDEX TO ADVERTISERS

Arizona Laminating 144

Burroughs Wellcome
Zyloprim 154
Emprin with Codeine 217

Camelback Hospital 133

Classified Ads 226, 227

Computed Neuorological Scanning Center 134

Computed Tomography 222

Comt-U-Med 135

Data Management Systems Corp. 145

Doctors Central Directory 226

Eli Lilly & Co.
V-Cillin K 155

HBA Life Insurance 119

Health Agencies of the West 140

House of Mailings 226

Janssen Pharmaceuticals
Monistat IV 136, 137, 138

Kiva Professional Plaza 150

Le Continental 226

Medical Bookstore 144

Merrell National
Bentyl 142, 143, 144
Tenuate 150, 151
Quinamm 170, 171

Mica Insurance Co. 149

Mullen Medical Service 226

Pfizer Laboratories
Sinequan 146, 147, 148

Roche Labs
Valium Second Cover, 132
Bactrim Third Cover, Fourth Cover

Roswell Bookbinding 134

William H. Rorer
Perdiem 189, 190, 191, 192

Santa Barbara Seminars 223

SFC Financial Services 170

Smith Kline Diagnostics
Hemoccult 141

Smith Kline & French
Tagament 172

Danny T. Sievert
Insurance 226

St. Lukes Hospital &
Medical Center 145

UpJohn Company
Motrin 152, 153, 154

US Navy 170

Valley National Bank 139

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(ISSN 0004-1556) MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

SEMINARS IN CONTINUING EDUCATION

DERMATOLOGY

Acute Sunlight Damage to the Skin 254
Michael M. Schreiber, M.D.

ENDOCRINOLOGY & METABOLISM

Primary Hypothyroidism with Reversible Hyperprolactinemia and Pituitary Enlargement 256
J. Michael Powers, M.D., et al

ONCOLOGY

Pediatric Solid Tumors I: Wilms' Tumor 259
John J. Hutter, M.D., et al

PEDIATRICS

The Oral-Facial Digital Syndromes Reviewed: The Role of Computerized Axial Tomography in Managment 261
Cynthia J. Jacquemart, M.D., et al

SURGERY

Diagnostic and Operative Arthroscopy of the Knee
An Analysis of 400 Consecutive Cases 265
Saul N. Schreiber, M.D.

SPECIAL ARTICLES

Comparing the Attitude and Opinions of Arizona Physicians and Consumers 272
Stephen W. Brown

The United States Medical Student Abroad: A View from South of the Border 276
George D. Comerci, Jr., B.S, R.Ph.

Armchair Education
Audiovisual Programs for CME Credit in the U. of A. Health Sciences Center Library 278
A. Tschida Glassmeyer, R.N. M.A.

STATE OF THE ART

Cardiac Death After Recovery From Myocardial Infarction 279
Jay W. Smith, M.D.

EDITORIALS

Vitamins, Do We Really Need Them 281
Marshall B. Block,M.D.

Auxiliary Highlights 282
Mrs. John T. Clymer

CORRESPONDENCE 283

MEDICAL HISTORY

The Case of the Skunk Boat 290
John W. Kennedy, M.D.

ARMA REPORTS 290

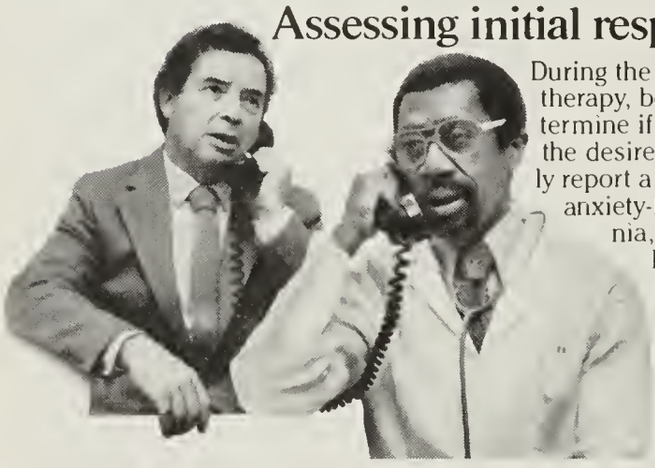
FUTURE MEETINGS 295

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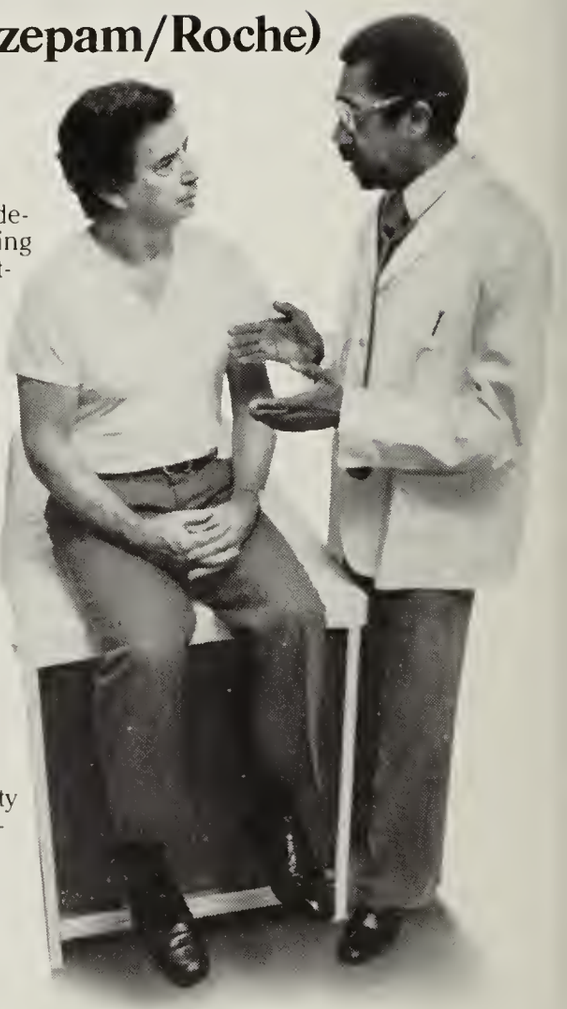
VOL. XXXVII, NO. 4

Monitoring patient response to Valium® (diazepam/Roche)

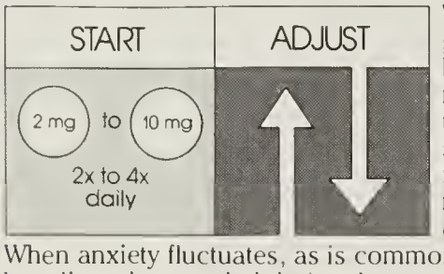


Assessing initial response to therapy

During the first follow-up visit after initiating therapy, both physician and patient should determine if Valium (diazepam/Roche) is having the desired effect. Most patients will promptly report a feeling of relaxation and relief of anxiety-linked symptoms such as insomnia, headaches, palpitations and hyperventilation. You will probably observe that the patient is calmer and more relaxed. If, however, patient response does not measure up to expectations, a reevaluation of the patient's profile with modification of the dosage regimen should be considered.



Making dosage adjustments



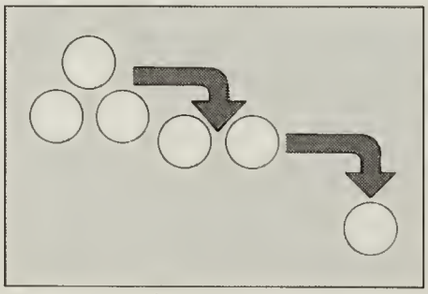
With any psychoactive medication it is good medical practice to initiate therapy at base dosage levels and titrate to the patient's needs. With Valium, experience has shown that 5 mg t.i.d. is usually sufficient although some patients with severe or persistent anxiety may require higher dosages initially. In geriatric or debilitated patients, the recommended dosage is 2 to 2½ mg once or twice daily. When anxiety fluctuates, as is common with most patients, the dosage may be adjusted as needed during the course of therapy; three strengths in scored tablets give you unmatched flexibility and simplicity in individualizing dosage.

Evaluating progress toward therapeutic goals

SET GOALS						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

At the beginning of therapy it is now common practice for both physician and patient to establish treatment goals and to estimate the amount of time needed to achieve them. Then the patient knows what to expect and when to expect it. Some physicians find that compiling a checklist of presenting symptoms and complaints is useful for assessing the patient's response from visit to visit. In this way, progress toward attainment of the therapeutic goal is reviewed at regular intervals. As patients feel their symptoms abate and begin to develop insight into the sources of their anxiety and psychic tension, the checklist can be expected to dwindle.

Discontinuing pharmacologic intervention



When you decide to discontinue therapy, tapering dosage is good medical practice. Although rarely necessary after short-term treatment with Valium, gradual dosage reduction is advisable for patients who have been on extended therapy. This gradual discontinuance should preclude either recurrence of pretreatment symptoms or development of untoward side effects. Symptoms of withdrawal have almost always been associated with abrupt discontinuance of therapy at higher dosages taken continuously over long periods of time.

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Valium® (diazepam/Roche) ℞

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety associated with anxiety disorders, transient situational disturbances and functional or organic disorders, psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy)
The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension; changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults*: Tension, anxiety and psychoneurotic states, 2 to 10 mg b i d to q i d; alcoholism, 10 mg t i d or q i d in first 24 hours, then 5 mg t i d or q i d as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t i d or q i d; adjunctively in convulsive disorders, 2 to 10 mg b i d to q i d. *Geriatric or debilitated patients*: 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children*: 1 to 2½ mg t i d or q i d initially, increasing as needed and tolerated (not for use under 6 months).

Supplied: Valium® Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500; Tel-E-Dose®: packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10; Prescription Paks of 50, available in trays of 10.

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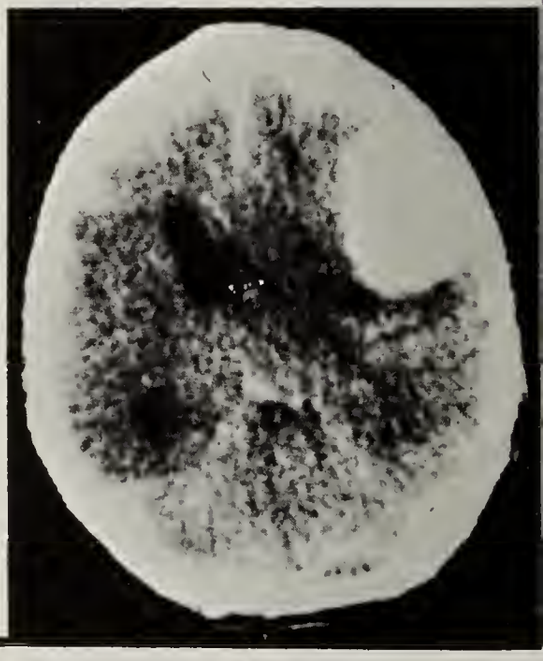
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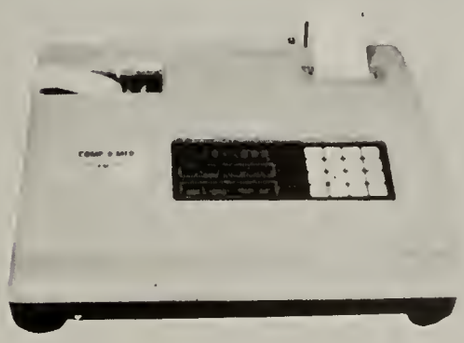
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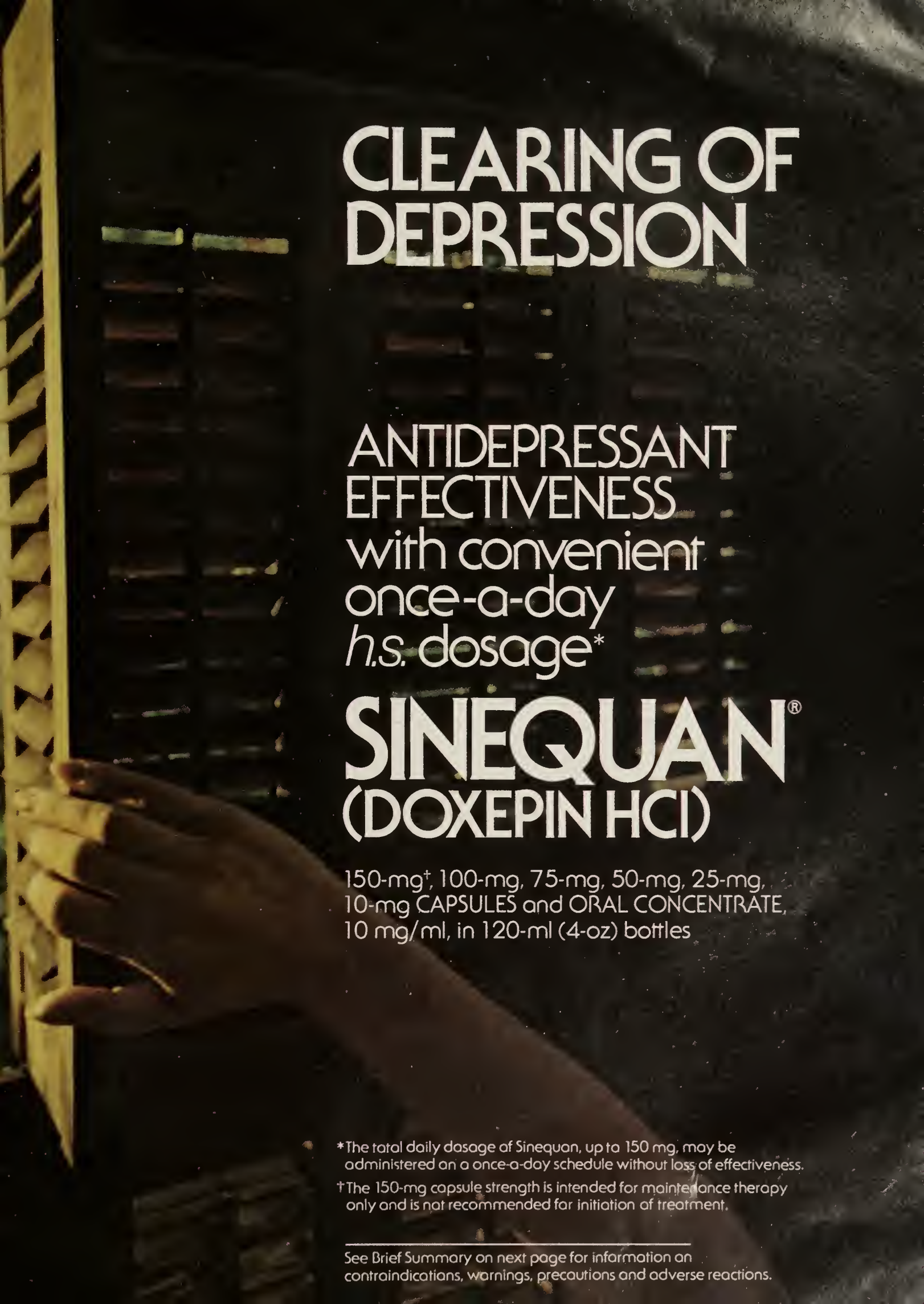
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†The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.

See Brief Summary on next page for information on contraindications, warnings, precautions and adverse reactions.

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CONVENIENT ONCE-A-DAY *h.s.* DOSAGE

which may improve patient compliance. The total daily dosage, up to 150 mg per day, may be given on a once-a-day schedule without loss of effectiveness. Sinequan may also be given on a divided dosage schedule, up to 300 mg per day.

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which may help to relieve the difficulty in falling and staying asleep, and the early-morning awakening often associated with depression.

ESTABLISHED ANTIANXIETY ACTIVITY

to help alleviate the anxiety which often accompanies clinical depression.

USUALLY WELL TOLERATED

At doses up to 150 mg per day, Sinequan does not generally affect the antihypertensive activity of guanethidine and related compounds. Tachycardia and hypotension have been reported occasionally. Drowsiness is the most commonly observed side effect. Dry mouth, blurred vision, constipation and urinary retention have been reported.

EXTENDED RANGE OF DOSAGE STRENGTHS

for flexibility in individualizing therapy.

BRIEF SUMMARY
SINEQUAN® (doxepin HCl) Capsules/Oral Concentrate

Contraindications. Contraindicated in individuals who have shown hypersensitivity to the drug, and in patients with glaucoma or a tendency to urinary retention. These disorders should be ruled out, particularly in older patients. Possibility of cross sensitivity with other dibenzoxepines should be kept in mind

Warnings. The once-a-day dosage regimen of SINEQUAN (doxepin HCl) in patients with intercurrent illness or patients taking other medications should be carefully adjusted. This is especially important in patients receiving other medications with anticholinergic effects.

Usage in Geriatrics: The use of SINEQUAN on a once-a-day dosage regimen in geriatric patients should be adjusted carefully based on the patient's condition.

Usage in Pregnancy: Reproduction studies performed in animals have shown no evidence of harm to the animal fetus. Since there is no experience in pregnant women receiving this drug, safety in pregnancy has not been established. There are no data with respect to the secretion of the drug in human milk and its effect on the nursing infant.

Usage in Children: Usage in children under 12 years of age is not recommended because safe conditions for its use have not been established.

MAO Inhibitors: Serious side effects and even death have been reported following the concomitant use of certain drugs with MAO inhibitors. Therefore, MAO inhibitors should be discontinued at least two weeks prior to the cautious initiation of therapy with this drug. The exact length of time may vary and is dependent upon the particular MAO inhibitor being used, the length of time it has been administered and the dosage involved.

Usage with Alcohol: It should be borne in mind that alcohol ingestion may increase the danger inherent in any intentional or unintentional SINEQUAN overdosage. This is especially important in patients who may use alcohol excessively.

Precautions. Since drowsiness may occur with the use of this drug, patients should be warned of that possibility and cautioned against driving a car or operating dangerous machinery while taking this drug.

Patients should also be cautioned that their response to alcohol may be potentiated.

Since suicide is an inherent risk in any depressed patient, and may remain so until significant improvement has occurred, patients should be closely supervised during the early course of therapy. Prescriptions should be written for the smallest feasible amount.

Should increased symptoms of psychosis or shift to manic symptomatology occur, it may be necessary to reduce dosage or add a major tranquilizer to the dosage regimen.

Adverse Reactions. NOTE: Some of the adverse reactions noted below have not been specifically reported with SINEQUAN use. However, due to the close pharmacological similarities among the tricyclics, the reactions should be considered when prescribing SINEQUAN.

Anticholinergic Effects. Dry mouth, blurred vision, constipation, and urinary retention have been reported. If they do not subside with continued therapy, or become severe, it may be necessary to reduce the dosage.

Central Nervous System Effects. Drowsiness is the most commonly noticed side effect. This tends to disappear as therapy is continued. Other infrequently reported CNS side effects are confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, and extrapyramidal symptoms and seizures.

Cardiovascular. Cardiovascular effects including hypotension and tachycardia have been reported occasionally.

Allergic. Skin rash, edema, photosensitization, and pruritus have occasionally occurred.

Hematologic. Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura.

Gastrointestinal. Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, and aphthous stomatitis have been reported. (See anticholinergic effects.)

Endocrine. Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels have been reported with tricyclic administration.

Other. Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, and headache have been occasionally observed as adverse effects.

Dosage and Administration. For most patients with illness of mild to moderate severity, a starting daily dose of 75 mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75 mg/day to 150 mg/day.

In more severely ill patients higher doses may be required with subsequent gradual increase to 300 mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300 mg/day.

In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25-50 mg/day.

The total daily dosage of SINEQUAN (doxepin HCl) may be given on a divided or once-a-day dosage schedule. If the once-a-day schedule is employed the maximum recommended dose is 150 mg/day. This dose may be given at bedtime. **The 150 mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Antianxiety effect is apparent before the antidepressant effect. Optimal antidepressant effect may not be evident for two to three weeks.

Overdosage.

A. Signs and Symptoms

1. Mild: Drowsiness, stupor, blurred vision, excessive dryness of mouth.

2. Severe: Respiratory depression, hypotension, coma, convulsions, cardiac arrhythmias and tachycardias.

Also: urinary retention (bladder atony), decreased gastrointestinal motility (paralytic ileus), hyperthermia (or hypothermia), hypertension, dilated pupils, hyperactive reflexes.

B. Management and Treatment

1. Mild: Observation and supportive therapy is all that is usually necessary.

2. Severe: Medical management of severe SINEQUAN overdosage consists of aggressive supportive therapy. If the patient is conscious, gastric lavage, with appropriate precautions to prevent pulmonary aspiration, should be performed even though SINEQUAN is rapidly absorbed. The use of activated charcoal has been recommended, as has been continuous gastric lavage with saline for 24 hours or more. An adequate airway should be established in comatose patients and assisted ventilation used if necessary. EKG monitoring may be required for several days, since relapse after apparent recovery has been reported. Arrhythmias should be treated with the appropriate antiarrhythmic agent. It has been reported that many of the cardiovascular and CNS symptoms of tricyclic antidepressant poisoning in adults may be reversed by the slow intravenous administration of 1 mg to 3 mg of physostigmine salicylate. Because physostigmine is rapidly metabolized, the dosage should be repeated as required. Convulsions may respond to standard anticonvulsant therapy; however, barbiturates may potentiate any respiratory depression. Dialysis and forced diuresis generally are not of value in the management of overdosage due to high tissue and protein binding of SINEQUAN.

Supply. SINEQUAN is available as capsules containing doxepin HCl equivalent to: 10 mg, 75 mg, and 100 mg doxepin: bottles of 100, 1000, and unit-dose packages of 100 (10 x 10's). 25 mg and 50 mg doxepin: bottles of 100, 1000, 5000, and unit-dose packages of 100 (10 x 10's). 150 mg doxepin: bottles of 50, 500, and unit-dose packages of 100 (10 x 10's). SINEQUAN Oral Concentrate (10 mg/ml) is available in 120 ml bottles with an accompanying dropper calibrated at 5 mg, 10 mg, 15 mg, 20 mg, and 25 mg. Each ml contains doxepin HCl equivalent to 10 mg doxepin. Just prior to administration, SINEQUAN Oral Concentrate should be diluted with approximately 120 ml of water, whole or skimmed milk, or orange, grapefruit, tomato, prune or pineapple juice. SINEQUAN Oral Concentrate is not physically compatible with a number of carbonated beverages. For those patients requiring antidepressant therapy who are on methadone maintenance, SINEQUAN Oral Concentrate and methadone syrup can be mixed together with Gatorade®, lemonade, orange juice, sugar water, Tang®, or water; but not with grape juice. Preparation and storage of bulk dilutions is not recommended.

More detailed professional information available on request.

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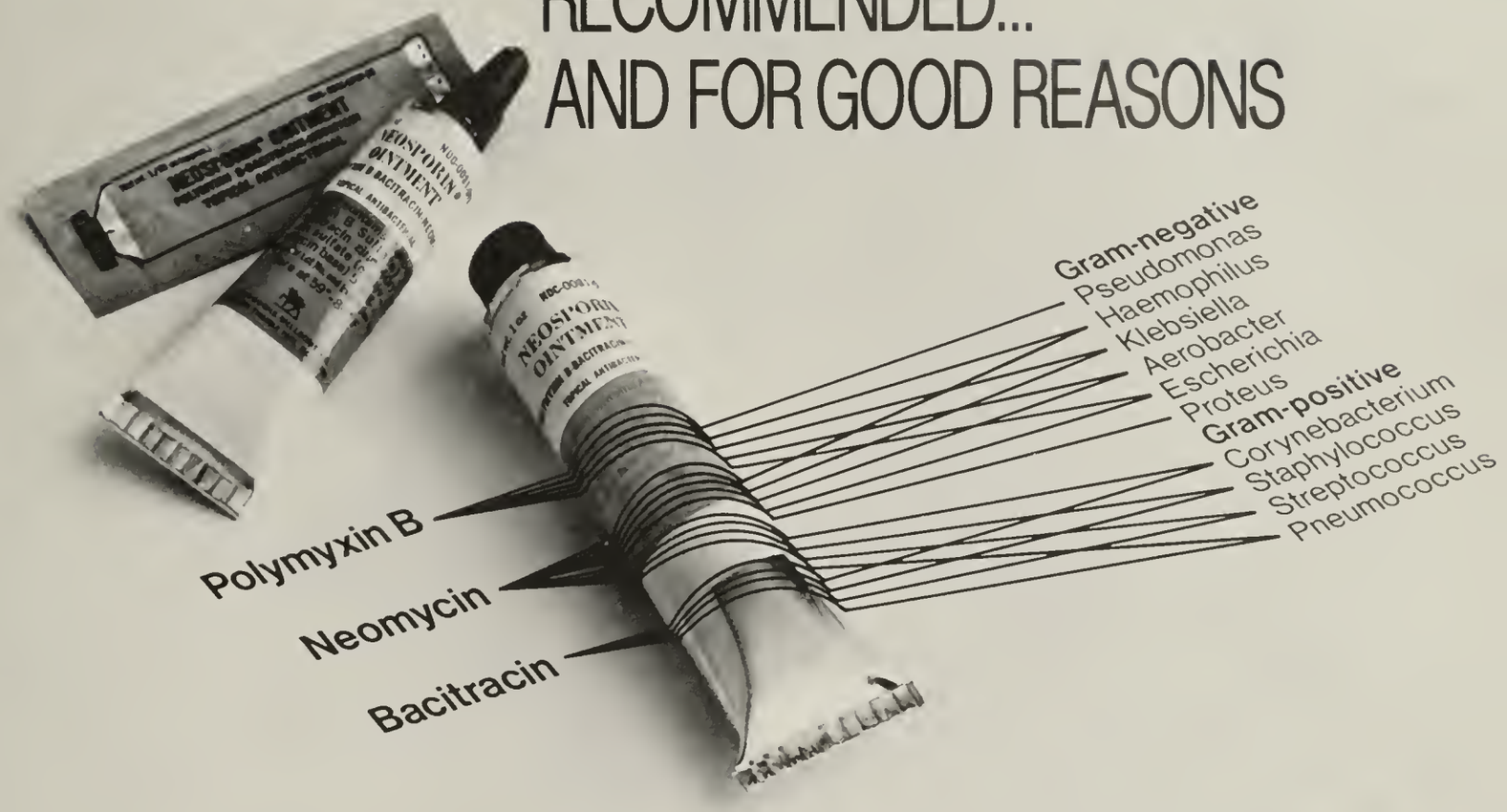
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WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as a failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section)

Complete literature available on request from Professional Services Dept. PML

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(Please see next page for prescribing information)

Perdiem™

Prescribing Information

ACTIONS: Perdiem™, with its gentle action, does not produce disagreeable side effects. The vegetable mucilages of Perdiem™ soften the stool and provide pain-free evacuation of the bowel. Perdiem™ is effective as an aid to elimination for the hemorrhoid or fissure patient prior to and following surgery.

COMPOSITION: Natural vegetable derivatives: A unique blend of psyllium and senna (Plantago Hydrocolloid with Cassia Pod Concentrate).

INDICATION: For relief of constipation.

PATIENT WARNING: Should not be used in the presence of undiagnosed abdominal pain. Frequent or prolonged use without the direction of a physician is not recommended. Such use may lead to laxative dependence.

DIRECTIONS FOR USE—ADULTS: Before breakfast and after the evening meal, one to two rounded teaspoonfuls of Perdiem™ granules should be placed in the mouth and swallowed with a full glass of warm or cold beverage. Perdiem™ granules should not be chewed. After Perdiem™ takes effect (usually after 24 hours, but possibly not before 36-48 hours), reduce the morning and evening doses to one rounded teaspoonful. Subsequent doses should be adjusted after adequate laxation is obtained.

IN OBSTINATE CASES: Perdiem™ may be taken more frequently, up to two rounded teaspoonfuls every six hours.

FOR PATIENTS HABITUATED TO STRONG PURGATIVES: Two rounded teaspoonfuls of Perdiem™ in the morning and evening may be required along with half the usual dose of the purgative being used. The purgative should be discontinued as soon as possible and the dosage of Perdiem™ granules reduced when and if bowel tone shows lessened laxative dependence.

FOR COLOSTOMY PATIENTS: To ensure formed stools, give one to two rounded teaspoonfuls of Perdiem™ in the evening with warm liquid.

DURING PREGNANCY: Give one to two rounded teaspoonfuls each evening.

FOR CLINICAL REGULATION: For patients confined to bed, for those of inactive habits, and in the presence of cardiovascular disease where straining must be avoided, one rounded teaspoonful of Perdiem™ taken once or twice daily will provide regular bowel habits. Take with a full glass of water or beverage.

FOR CHILDREN: From age 7—11 years, give one rounded teaspoonful one to two times daily. From age 12 and older, give adult dosage.

NOTE: It is extremely important that Perdiem™ should be taken with a plentiful supply of liquid.

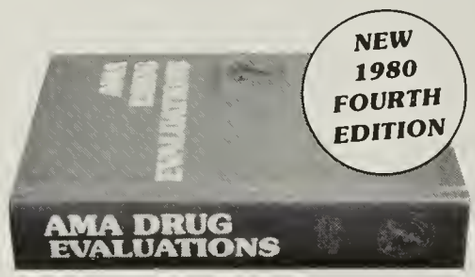
HOW SUPPLIED: Granules: 100 gram (3.5 oz) and 250 gram (8.8 oz) canisters.

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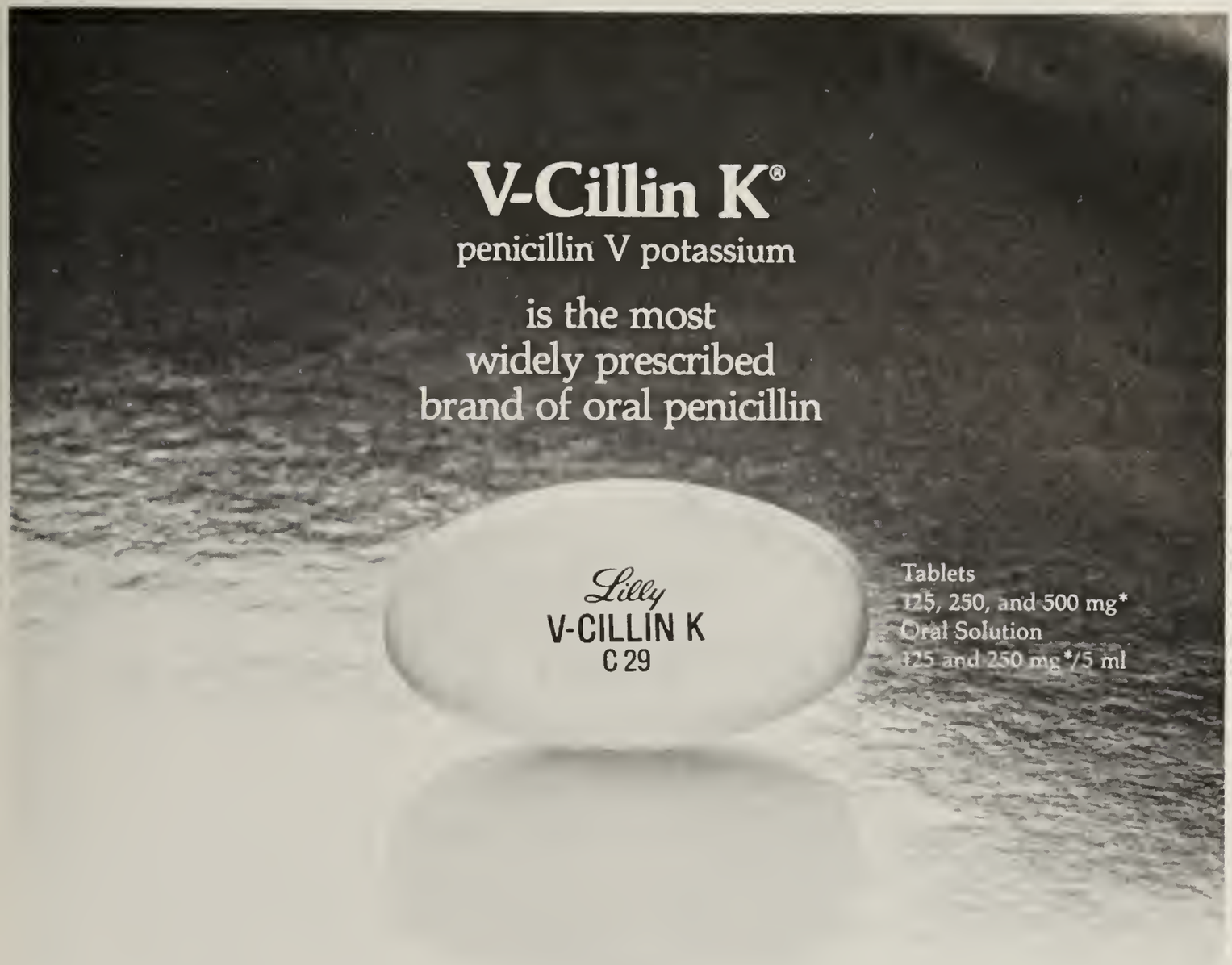
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V-Cillin K®
penicillin V potassium

Description: V-Cillin K is the potassium salt of penicillin V. This chemically improved form combines acid stability with immediate solubility and rapid absorption.

Indications: For the treatment of mild to moderately severe pneumococcal respiratory tract infections and mild staphylococcal skin and soft-tissue infections that are sensitive to penicillin G. See the package literature for other indications.

Contraindication: Previous hypersensitivity to penicillin.

Warnings: Serious, occasionally fatal, anaphylactoid reactions have been reported. Some patients with penicillin hypersensitivity have had severe reactions to a cephalosporin; inquire about penicillin, cephalosporin, or other allergies before treatment. If an allergic reaction occurs, discontinue the drug and treat with the usual agents (e.g., epinephrine or other pressor amines, antihistamines, or corticosteroids).

Precautions: Use with caution in individuals with histories of significant allergies and/or asthma. Do not rely on oral administration in patients with severe illness, nausea, vomiting, gastric dilatation, cardiospasm, or intestinal hypermotility. Occasional patients will not absorb therapeutic amounts given orally. In streptococcal infections, treat until the organism is eliminated (minimum of ten days). With prolonged use, nonsusceptible organisms, including fungi, may overgrow; treat superinfection appropriately.

Adverse Reactions: Hypersensitivity, including fatal anaphylaxis. Nausea, vomiting, epigastric distress, diarrhea, and black, hairy tongue. Skin eruptions, urticaria, reactions resembling serum sickness (including chills, edema, arthralgia, prostration), laryngeal edema, fever, and eosinophilia. Infrequent hemolytic anemia, leukopenia, thrombocytopenia, neuropathy, and nephropathy, usually with high doses of parenteral penicillin. [102175]

***Equivalent to penicillin V.**

Additional information available to the profession on request.

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When systemic antifungal therapy must be instituted even in compromised patients...

lack of nephrotoxicity makes Monistat i.v.* the therapy of choice

*TRADEMARK

With MONISTAT* i.v. you can:

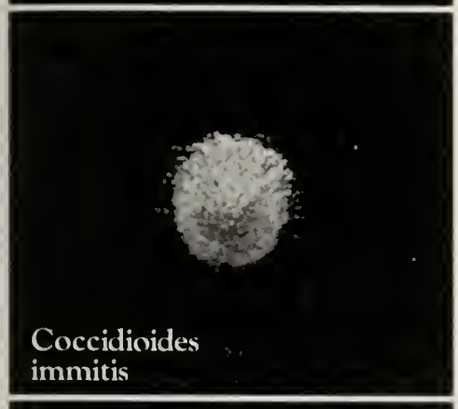
- **Start treatment early**
 ...without fear of kidney damage.
- **Continue treatment as long as necessary**
 No renal damage has been reported in long-term use.
- **Treat again and again if needed**
 No renal toxicity has been reported even in patients receiving several courses of therapy.
- **Treat patients with pre-existing renal failure**
 MONISTAT* i.v. has not been reported to cause further renal damage.

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Candida albicans



Coccidioides immitis



Paracoccidioides brasiliensis



Cryptococcus neoformans

Highly effective, improvement often seen within 1-3 weeks

Patients who do not respond or develop resistance to amphotericin B have responded to MONISTAT* i.v.

Resistance does not develop

In vitro resistance of clinical isolates has not been reported during clinical trials.

Generally well tolerated by severely debilitated patients

Patients with cancer, those receiving immunosuppressive agents, and patients with serious underlying conditions, such as diabetes mellitus or renal failure.

Photos courtesy of Dubos, R.J., Bacterial and Mycotic Infections of Man, J.B. Lippincott Company, 1965 and Burrows, W., Textbook of Microbiology, W.B. Saunders Company, 19th edition.

Please turn page for Prescribing Information.



An important advance in the treatment of systemic mycoses

Monistat i.v.

TRADEMARK

(miconazole)

broad-spectrum antifungal agent

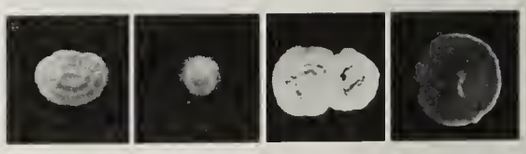
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JPI-024

Broad-spectrum antifungal agent

Monistat i.v.™



(miconazole)

for intravenous infusion

DESCRIPTION: MONISTAT i.v. (miconazole), 1- [2- (2,4-dichlorophenyl)- 2- [(2,4-dichlorophenyl) methoxyl] ethyl]-1H-imidazole, is a synthetic antifungal supplied as a sterile solution for intravenous infusion. Each ml of this solution contains 10 mg of miconazole with 0.115 ml PEG 40 castor oil, 1.0 mg lactic acid USP, 0.5 mg methylparaben USP, 0.05 mg propylparaben USP in water for injection. Miconazole i.v. is a clear colorless to slightly yellow solution having a pH of 3.7 to 5.7.

CLINICAL PHARMACOLOGY: MONISTAT i.v. is rapidly metabolized in the liver and about 14% to 22% of the administered dose is excreted in the urine, mainly as inactive metabolites. The pharmacokinetic profile fits a three-compartment open model with the following biologic half-life: 0.4, 2.1, and 24.1 hours for each phase respectively. The pharmacokinetic profile of MONISTAT i.v. is unaltered in patients with renal insufficiency, including those patients on hemodialysis. The in-vitro antifungal activity of MONISTAT i.v. is very broad. Clinical efficacy has been demonstrated in patients with the following species of fungi: *Coccidioides immitis, Candida albicans, Cryptococcus neoformans, and Paracoccidioides brasiliensis.*

Recommended doses of MONISTAT i.v. produce serum concentrations of drug which exceed the in-vitro MIC values for the fungal species noted above. Doses above 9 mg/kg of MONISTAT i.v. produce peak blood levels above 1µg/ml in most cases. The drug penetrates into joints.

INDICATIONS: MONISTAT i.v. is indicated for the treatment of the following severe systemic fungal infections: coccidioidomycosis, candidiasis, cryptococcosis, paracoccidioidomycosis, and for the treatment of chronic mucocutaneous candidiasis. However, in the treatment of fungal meningitis and urinary bladder infections an intravenous infusion alone is inadequate. It must be supplemented with intrathecal administration and bladder irrigation. Appropriate diagnostic procedures should be followed and MIC's should be determined.

MONISTAT i.v. should not be used to treat common trivial forms of fungal diseases.

CONTRAINDICATIONS: MONISTAT i.v. is contraindicated in those patients who have shown hypersensitivity to it.

WARNINGS: Rapid injection of undiluted MONISTAT i.v. may produce transient tachycardia or arrhythmia.

PRECAUTIONS: Before a treatment course of MONISTAT i.v. is started, the physician should make sure that the patient is not hypersensitive to the drug product. MONISTAT i.v. should be given by intravenous infusion. The treatment should be started under stringent conditions of hospitalization but subsequently may be given to suitable patients under ambulatory conditions with close clinical monitoring. It is recommended that an initial dose of 200 mg be given with the physician in attendance. It is also recommended that clinical laboratory monitoring including hemoglobin, hematocrit, electrolytes and lipids be performed.

It should be borne in mind that systemic fungal mycoses may be complications of chronic underlying conditions which in themselves may require appropriate measures.

Pregnancy: Reproductive studies with MONISTAT i.v. in rats and rabbits revealed no evidence of impaired fertility or harm to the fetus. There are no data, however, on the use of the drug in pregnant women.

Children: Since the safety of miconazole i.v. in children under one year of age has not been extensively studied, its benefits in this age group must be weighed against the possible risks involved.

ADVERSE REACTIONS: Adverse reactions which have been observed with MONISTAT i.v. therapy include phlebitis, pruritus, rash, nausea, vomiting, febrile reactions, drowsiness, diarrhea, anorexia and flushes. In the U.S. studies, 29% of 209 patients studied had phlebitis, 21% pruritus, 18% nausea, 10% fever and chills, 9% rash, and 7% emesis. Transient decreases in hematocrit and serum sodium values have been observed following infusion of MONISTAT i.v. Thrombocytopenia has also been reported. No serious renal or hepatic toxicity has been reported. If pruritus and skin rashes are severe, discontinuation of treatment may be necessary. Nausea and vomiting can be mitigated with antihistaminic or antiemetic drugs given prior to MONISTAT i.v. infusion, or by reducing the dose, slowing the rate of infusion, or avoiding administration at mealtime.

Aggregation of erythrocytes or rouleau formation on blood smears has been reported. Hyperlipemia has occurred in patients and is reported to be due to the vehicle, Cremophor EL (PEG 40 castor oil).

DRUG INTERACTIONS: Drugs containing cremophor type vehicles are known to cause electrophoretic abnormalities of the lipoprotein. These effects are reversible upon discontinuation of treatment but are usually not an indication that treatment should be discontinued.

Interaction with the coumarin drugs resulting in an enhancement of the anticoagulant effect has also been reported. In cases of simultaneous treatment with MONISTAT i.v. and coumarin drugs, the anticoagulant effect should be carefully titrated since reductions of the anticoagulant doses may be indicated.

DOSAGE AND ADMINISTRATION:

DOSAGE

Adults. The doses may vary with the diagnosis and with the infective agent, from 200 to 1200 mg per infusion. The following daily doses, which may be divided over 3 infusions, are recommended:

Organism	Dosage Range*	Duration of Successful Therapy (weeks)
Coccidioidomycosis:	1800 to 3600 mg per day	3 to >20
Cryptococcosis:	1200 to 2400 mg per day	3 to >12
Candidiasis:	600 to 1800 mg per day	1 to >20
Paracoccidioidomycosis:	200 to 1200 mg per day	2 to >16

*May be divided over 3 infusions.

Repeated courses may be necessitated by relapse or reinfection.

Children. A total daily dose of about 20 to 40 mg/kg is generally adequate. However, a dose of 15 mg/kg body weight per infusion should not be exceeded.

ADMINISTRATION: MONISTAT i.v. should be diluted in at least 200 ml of fluid. The diluent of choice is 0.9% sodium chloride or alternatively Dextrose 5% injectable solution. The intravenous infusion should be given over a period of 30 to 60 minutes.

Generally, treatment should be continued until all clinical and laboratory tests no longer indicate that active fungal infection is present. Inadequate periods of treatment may yield poor response and lead to early recurrence of clinical symptoms. The dosing intervals and sites and the duration of treatment vary from patient to patient and depend on the causative organism.

OTHER MODES OF ADMINISTRATION: Intrathecal. Administration of the undiluted injectable solution of MONISTAT i.v. by the various intrathecal routes (20 mg per dose) is indicated as an adjunct to intravenous treatment in fungal meningitis. Succeeding intrathecal injections may be alternated between lumbar, cervical, and cisternal punctures every 3 to 7 days. Bladder instillation of 200 mg of diluted solution is indicated in the treatment of mycoses of the urinary bladder.

HOW SUPPLIED: MONISTAT i.v. is supplied in 20 ml ampoules.

MONISTAT i.v. (miconazole) is an original product of Janssen Pharmaceutica N.V., Belgium.

JANSSEN PHARMACEUTICA INC.
New Brunswick, N.J. 08903

Committed to research...
because so much remains to be done

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Attn: D.T. Mallegol

Please send me more information about the use of MONISTAT i.v.™ (miconazole) in systemic candidiasis and other systemic mycoses.

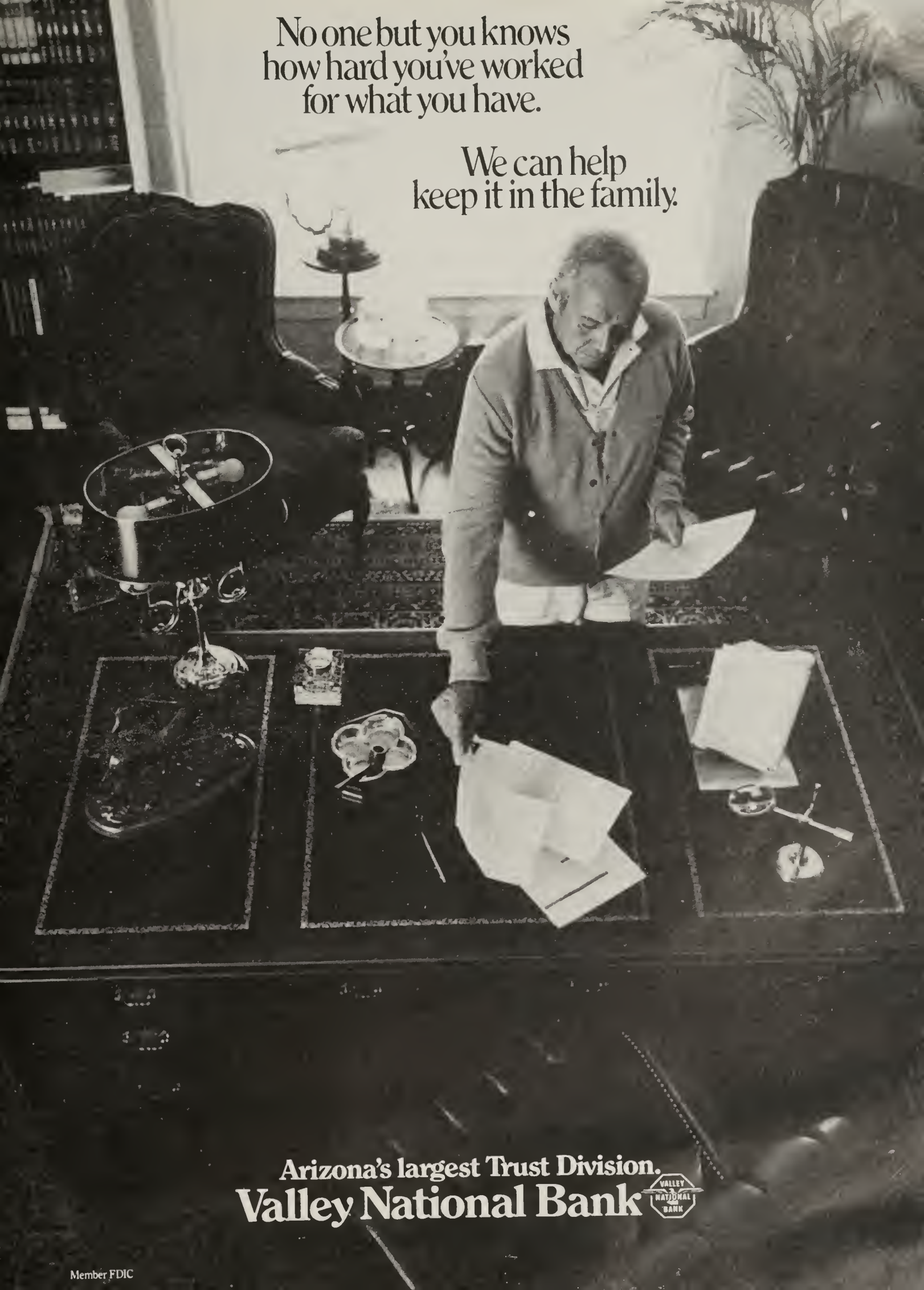
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Seminars in Dermatology

Acute Sunlight Damage to the Skin

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People, by occupation, the lure of sports and recreation, and by design, the past 35 years, have been exposing themselves by the millions to the sun. Although most members of our society idolize a suntan, we are slowly becoming aware that sun-exposure can be a negative factor in our lives. In moderation, the sun offers benefits - some genuine, most imagined. In excess, it is dangerous causing injuries to the skin, eyes, and sometimes internal structures. We as doctors are seldom called upon to treat the effects of underexposure to the sun, but quite frequently we must treat the effects of overexposure - both acute and chronic.

Wavelengths of the sunlight spectrum longer than 400 nm can produce skin damage if the intensity is great enough, but under natural sunlight conditions this does not occur. Wavelengths less than 290 nm fortunately are absorbed by the ozone layer in the stratosphere 500 miles above the earth's surface so they do not reach us. Without this ozone layer, we would be in real trouble. The wavelengths we are concerned about are limited to the 290-320 nm ultra-violet range (UVB). These wavelengths produce sunburn, skin aging, and skin cancers, with some help from the 320-400 nm wavelengths (UVA). (Fig. 1)

The morphologic changes of the skin following U V radiation exposure depend on the following factors.

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1) The dose and wavelength of the U V light; this is influenced by the following:

Altitude - Intensities in the erythema band rise 2% per 1000 feet.

Latitude - The closer to the equator, the stronger the U V rays. Basal cell carcinoma and squamous cell carcinoma incidence in the United States doubles for each 3'48" decrease in latitude (265 miles).

Time of year - In the summer, the sun is closer to earth so the U V radiation is stronger.

Time of Day - Between 10:00 a.m. and 3:00 p.m. the U V radiation is more intense because the sun is more verticle and there is less atmospheric filtering.

Smog - This filters out some of the U V radiation. Clouds filter out very little of the U V radiation.

Water Vapor - Particles of water act as mirrors giving more reflected rays.

Temperature - The higher the temperature, the more damage from the U V radiation. This occurs because less clothing is worn, and the skin is more susceptible to damage. If it is cool, there is a false sense of protection and a longer time will be spent in the sun.

Wind Velocity - The wind gives a cooling effect to the skin, which is deceiving. There is also less sweat produced on skin with its natural sunscreen of urocanic acid.

Environment - The reflectance by concrete, sand, snow, and water (minimal but does penetrate to 3 ft.) can

increase the amount of U V radiation hitting the skin. Window glass absorbs those wavelengths less than 320 nm, thus it affords protection from sunburn.

2) The amount of melanin pigment in the skin will determine how sensitive the skin is to U V radiation damage. The lighter the skin color, the more easily it will burn and the earlier the age of the patient for developing the chronic effects of U V radiation damage.

3) The thicker the epidermis and stratum corneum the more protection from U V radiation. Previous sunlight exposure increases the skin's thickness, which can be up to six times the thickness of unexposed skin.

4) Drug usage by the individual can effect the skin when exposed to U V radiation. Systemic drugs such as sulfonamides, thiazides, sulfonylureas, diethystilbesterol, isoniazid, tetracyclines, antihistamines, artifical sweeteners, and griseofulvin increase the intensity of sunburn (some of these reactions are phototoxic, some photoallergic). Antimalarials, Beta-carotene, indomethicin, and aspirin decrease the sensitivity of the skin to sunlight. Topical chemicals such as furocoumarins in perfume and antibacterials in soaps accentuate sunburn. PABA, benzophenones, zinc oxide and titantum dioxide protect the skin from U V irradiation.

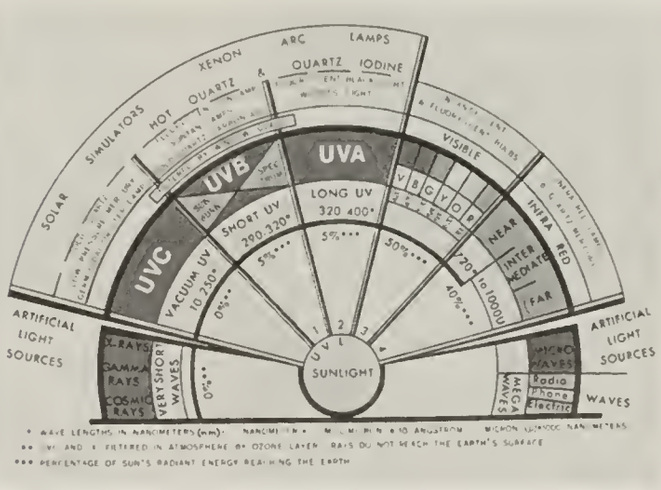
One of the acute affects of U V radiation exposure to the skin, and the most painful, is sunburn.

As a guideline, it takes 15-20 minutes of mid-summer, noonday sun, at 40° N. latitude to get a minimum erythema on untanned, white skin of the back. Obviously the various factors mentioned above will produce a variance from this guide.

The wavelengths from 290 to 400 nm are absorbed by the skin with 10-40% hitting the dermis. These wavelengths produce changes due to photo-chemical metabolites the most important being, an increase of the biosynthesis of prostaglandins which are mediators of inflammation.[2]

Clinically, and mainly from the 290-320 nm wavelengths, there is a faint erythema during sun-exposure, disappearing shortly after the exposure has ended. After a latent interval of 2-4 hours, there is a delayed prolonged reaction of redness and pain reaching a maximum in 10-24 hours and dissipating in 72-96 hours.[2-5] If the burn is severe, edema, pain, and blistering occur along with such systemic effects as nausea, weakness, chills, fever, prostation and even shock. It should be noted that one does not get more than a second degree burn from the sun and that any third degree findings are due to sepsis.

A sunburn should be treated like any thermal burn with concern for the basic principles of relief of pain, prevention of infection and decreasing the skin irritation (erythema). If the burn is mild and localized to a small area, probably nothing need be done. If the burn is of a second degree (edema and bullae) or superficial and extensive, then therapy is indicated. This therapy should consist of cool compresses to the involved areas



Lopez DA: The Electromagnetic Spectrum, Journal of the Association of Military Dermatology, Vol. 4, No. 2, Page 21, 1978.

consisting of water alone, or mixed with skim milk, colloidal Aveeno powder or Domboro powders. The compresses should be used every two to four hours, lasting fifteen to twenty minutes at a time, and kept moist and cool. These compresses should continue until the discomfort is relieved, and the edema and bullae start resolving. Other topical therapy can include a mild corticosteroid cream and silver sulfadiazine if extensive denudation is present. Systemically, acetylsalicylic acid and a short course of corticosteroids will markedly shorten the morbidity time. Patients with sunburns should be instructed that their skin will burn again with a shorter exposure time for many months following a sunburn.

Complications can occur i.e., precipitation of herpes simplex or acneiform folliculitis, the development of freckles, and the activation of certain cutaneous and systemic disease (porphyria cutanea tarda and varigata, erythropoietic protoporphyria, lupus erythematosis).

Certain physiological effects of U V radiation exposure can start as early as 30 minutes, after sun-exposure. These include increased blood flow to the skin, vasodilatation, decreased blood pressure (reflex vasodilatation in abdominal vasculature), increased vascular permeability, transudation of plasma proteins into the skin, and cellular exudation of neutrophils - all of which reach a maximum in 8-24 hours and can last for days. Changes in blood chemistry such as increased blood histamine, decreased serum cholesterol, decreased blood sugar, flat glucose tolerance curve, decreased serum thyroxin and decreased blood phosphatase in children can occur.[7] A disorganization of the cells of the epidermis due to inhibition of DNA and RNA synthesis causing cell death occurs in 24-48 hours after exposure (less with darker skin) with regeneration visible by 72 hours and cell multiplication increased 2-3 times normal up to 40 days following exposure. Within the 40 day period, the skin can resunburn more easily because of its altered state.[2,5,6]

Of course what our culture is looking for is the beautiful tan - hopefully without the burn. Tanning, the other acute effect of U V radiation on the skin is from wavelengths mainly in the UVB (290-320 nm) range with some help from the UVA (320-400 nm) wavelengths.[2 5]

There are two types of tanning. First, the immediate type, which is due to oxidation of preformed melanin (this starts in minutes, reaches a maximum in one hour and is gone in a few days). It is due mainly to the UVA wavelengths. Second, the delayed type, which is due to movement of melanin granules throughout the epidermal cells, beginning in about 2-4 days; and also due to formation of new melanin (stimulated by UVB—290-320 nm wavelengths), which starts in two days, reaching a maximum in 2-3 weeks and declining by one month. This later type of tanning can last up to ten months. It should be noted that even though tanning gives protection from U V radiation, one can still burn, even blacks can burn.

Tanning, as well as burning of the skin represents skin damage which will eventually develop into the chronic sequellae of sun-exposure.

Without a sunburn the individual is unaware that he is damaging his skin, but with each and every sun-exposure there is inhibition of DNA, RNA and protein synthesis.[2-5] These chronic skin changes are due to the cumulative effects of U V radiation. They consist of wrinkles, yellowing, pebbling, purpura (dorsa hands and forearms), telangiectasia, skin laxity, brown spots (solar lentigo) and of course the more serious problems of actinic keratoses, basal cell and squamous cell carcinoma, and malignant melanomas.

Arizona, in particular southern Arizona,[1] has some very unique features both geographic and meteorologic allowing for not only more, but a greater intensity of U V irradiation exposure from the sun. Because of these features, which include a high altitude, more clear days, high average annual temperature, and a low latitude, Arizona physicians will see a high number of people with not only these acute reactions from sunlight mentioned above, but more of the chronic skin changes from U V radiation.

Exposure to the U V radiation from sunlight can have disasterous acute and chronic effects.

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Seminars in Endocrinology and Metabolism

Primary Hypothyroidism with Reversible Hyperprolactinemia and Pituitary Enlargement

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Pituitary enlargement, amenorrhea and galactorrhea may all develop in patients with primary hypothyroidism. A young woman who presented with amenorrhea, galactorrhea and a suprasellar mass demonstrated by computerized tomography (CT) was initially presumed to harbor a pituitary adenoma. She was, however, hypothyroid with markedly elevated serum thyroid stimulating hormone (TSH) levels. Following thyroid replacement therapy the amenorrhea and galactorrhea resolved and a subsequent CT scan documented resolution of the enhancing suprasellar mass.

Case Report:

A 28 year old Gravida II, Para II, Abortus O woman was hospitalized for secondary amenorrhea associated with bilateral galactorrhea of four years duration. She was otherwise well and taking no medication. Her second normal pregnancy was followed by a six week period of breastfeeding which spontaneously stopped. Postpartum menstrual periods did not resume, and bilateral galactorrhea developed several months after the postpartum breast feeding ceased. There was no

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Figure 1 A, B, C
Computerized tomographic scans following infusion of 300 ml. of Conray 30. A and B utilized a 4 mm. collimator at 25 degrees above the orbitomeatal plane. C: Coronal scan through the sella turcica. An enhancing mass is present in the sella turcica extending into the suprasellar cistern.

history of thyroid disease but she gained five to ten pounds during the three months prior to hospitalization. Her voice had become hoarse and her skin somewhat dry. Neurological examination was unremarkable aside from marked slowing of the relaxation phase of all muscle stretch reflexes. Her visual acuity, visual fields and eye movements were normal. Routine skull x-rays demonstrated generalized rounding and enlargement of the sella turcica. Thinning of the sella floor was found on a hypocycloidal tomographic examination. An enhancing intrasellar mass extending into the suprasellar cistern was noted on horizontal and coronal CT studies (Figure 1). A serum prolactin by radioimmunoassay (RIA) was 140 ng/ml (normal less than 20 ng/ml). Thyroid studies revealed a total thyroxine (T_4) by RIA of 1.0 ug/ml (normal 4.5-11.5 ug/ml), a T_3 resin uptake (T_3RU) of 22% (normal 25-35%), and a markedly elevated serum TSH of 200 mIU/ml (normal less than 5 mIU/ml). Serum lutenizing hormone (LH) was 1.7 mIU/ml and follicular stimulating hormone (FSH) was 10.8 mIU/ml, both in the normal range. Replacement with increasing doses of thyroxine was then undertaken. Two months after replacement therapy was initiated, repeat thyroid measurements were in the normal range with T_4 11.5 ug/ml, T_3RU 25%, and a serum TSH 3.3 mIU/ml. Serum prolactin levels gradually returned to normal over four months. Repeat CT scans obtained four months after initiation of therapy demonstrated complete resolution of the enhancing mass (Figure 2). Spontaneous recurrence of menstruation and cessation of lactation occurred within five months of thyroid replacement.

Discussion:

Our patient presented with galactorrhea, amenorrhea and an enlarged sella turcica. Suprasellar mass extension was demonstrated by computerized tomography. Laboratory studies established the presence of hyperprolactinemia and clinically evident hypothyroidism was confirmed. The presence of an elevated serum TSH established the primary nature of the hypothyroidism and distinguished it from that due to a pituitary tumor. Prolactin levels returned to normal following thyroid replacement. The direct correlation in declining serum TSH and prolactin levels is in agreement with the classic description of this association.[1] The cessation of galactorrhea and the resumption of menses occurred in concert with these biochemical changes, lending further support to their interrelationship.

Primary hypothyroidism results in increased pituitary sensitivity to thyrotropin releasing hormone (TRH) such that TSH production is increased. TRH also stimulates prolactin release, a response that is further magnified by the hypothyroid state. Thus, patients with primary hypothyroidism may develop galactorrhea and amenorrhea.

Activation of the hypothalamic-pituitary axis by thyroid destruction in rodents results in pituitary hyperplasia and ultimately in an autonomous pituitary adenoma.[2] It is presumed that a similar process may occur in humans. Chronic increased TRH stimulation causes hyperplasia of TSH producing cells and may result in pituitary enlargement. Samaan, et al.[3] describe two such patients who developed pituitary adenomas. Immunostaining of the tumors demonstrated no TSH

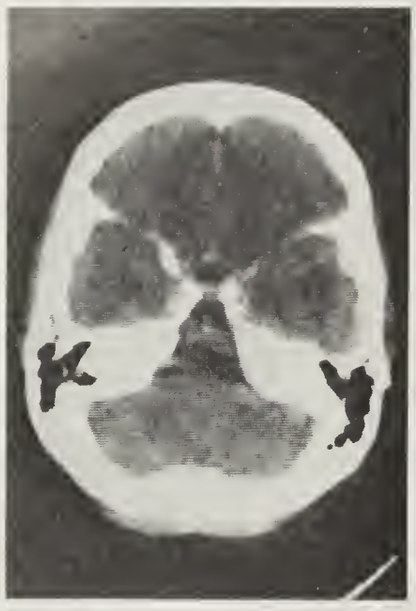




Figure 2 A, B
Computerized tomographic scans performed after four months of thyroid replacement. Horizontal and coronal scans obtained following an infusion of Conray 30 demonstrates resolution of the enhancing mass and possible development of an empty sella.

producing cells in the adenoma, presumably indicating evolution to an autonomous, nonfunctional state.

There are several reports of adults with primary hypothyroidism developing pituitary enlargement, occasionally with chiasmal compression.[4-8] Resolution of visual deficits and reduction in sella size followed thyroid replacement. Pathological studies were not obtained and a distinction between hyperplasia and adenoma could not be made. It seems probable that cases responsive to thyroid replacement represent examples of hyperplasia. The CT scan may provide a basis for this distinction by documenting the resolution of the enhancing mass when hyperplasia is present.

A few patients studied with pneumoencephalography following thyroid replacement have demonstrated air extending into the sella.[4, 7] The follow-up CT scan in our patient is suggestive of an empty sella. Thus, resolution of pituitary hyperplasia following replacement therapy may be another cause of the empty sella.

Pituitary hyperplasia has been reported in other circumstances where there has been prolonged endocrine end-organ failure. In primary adrenal cortical insufficiency, unopposed serum adrenocorticotrophin (ACTH) secretion can lead to pituitary enlargement and eventual glandular autonomy and has been given the eponym Nelson Syndrome.[9] Hypogonadism stimulates increased gonadotrophin secretion. Castration in rodents may result in pituitary adenomas. Recently, patients with gonadal dysgenesis have been reported who have enlarged pituitary fossae.[10] These pituitary gland changes resolved with institution of appropriate hormone replacement.

Patients presenting with amenorrhea and galactorrhea should be evaluated for the presence of a pituitary adenoma because it remains the most common etiology. One must exclude underlying hypothyroidism which can have a similar clinical presentation and result in enlargement of the pituitary gland. This distinction is of paramount importance. The treatment of primary hypothyroidism with amenorrhea, galactorrhea and pituitary hyperplasia is medical while surgical modalities are usually recommended when a pituitary adenoma results in the amenorrhea-galactorrhea syndrome.

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Oncology

Pediatric Solid Tumors I: Wilms' Tumor

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During the past twenty years, new knowledge has led to better management and prolonged disease-free survival for many children with malignant solid tumors. In particular, the outlook for children with Wilms' tumor, rhabdomyosarcoma, and Ewing's sarcoma has greatly improved. This article will review the clinical features of Wilms' tumor and summarize the more recent advances in its management.

Clinical Features and Disease Evaluation

Wilms' tumor, also known as nephroblastoma, is an embryonic mesodermal tumor of the kidney. It is primarily a tumor of infancy and childhood with a peak incidence at one to five years of age. The occurrence of Wilms' tumor is uncommon after the age of eight years, although an occasional case has been observed in an adult.[1] The incidence of Wilms' tumor is constant worldwide and in the United States has been calculated to be 7.8 cases per million persons per year.[2]

The chief complaint and history in a child with Wilms' tumor are often non-specific. A complete physical examination which includes a thorough abdominal examination is helpful in the diagnosis of Wilms' tumor. Wilms' tumor is often first suspected after palpation of an abdominal mass which is usually anterior, solid, irregular, non-tender, and does not cross the midline. Presenting symptoms include abdominal distention and a constellation of non-specific complaints such as malaise, vague abdominal pain, and low-grade fever. Systemic symptoms are usually absent in the patient with localized disease. Less common signs and symptoms include anorexia, vomiting, diarrhea, constipation, and hypertension. In contrast to renal cell carcinoma, gross hematuria is an uncommon manifestation of Wilms' tumor. Microscopic hematuria, however, occurs in approximately 25% of cases.

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Table 1
Recommended Studies to be Performed in Children with Suspected Wilms' Tumor

(a)	intravenous pyelogram
(b)	abdominal ultrasound
(c)	chest X-ray
(d)	urinalysis, BUN, and creatinine
(e)	prothrombin time, partial thromboplastin time, and fibrinogen
(f)	CBC, differential, and platelet count
(g)	uric acid
(h)	liver scan

The incidence of Wilms' tumor is increased in children with certain congenital anomalies such as hemihypertrophy,[3] hamartomas, pseudohermaphroditism, nephrosis,[4] other genitourinary anomalies, and the visceral cytomegaly syndrome (Beckwith syndrome).[5] Wilms' tumor has been observed to develop in approximately one third of children with non-familial aniridia.[6]

Laboratory and other clinical studies to be performed in a child with suspected Wilms' tumor are outlined in Table 1. Once the diagnosis of Wilms' tumor has been conclusively established, whole-lung tomography or a computerized axial tomography (CAT) scan of the lungs should also be performed. A typical intravenous pyelogram (IVP) in a child with Wilms' tumor is shown in Figure 1. The calyceal system is more distorted than displaced and no calcifications are present. Arteriography is usually not necessary in the evaluation of Wilms' tumor. Coagulation studies are important for investigating the possibility of disseminated intravascular coagulation which may occur in association with a large tumor. Five to ten percent of patients will present with distant metastases (usually in the lungs) at the time of diagnosis. However, with modern therapy, long-term disease control and potential cure are possible even in the patient with widespread disease.

Treatment

The treatment of a child with Wilms' tumor is a multidisciplinary effort which includes surgical excision, radation therapy, and chemotherapy. Coordination of this effort at an institution skilled in the management of cancer in children is recommended.



Figure 1
IVP demonstrating Wilms' tumor of upper pole of left kidney. There is partial duplication of the left collecting system. The upper left collecting system is distorted by a mass in the upper pole of the left kidney.

Prior to the surgical removal of a suspected Wilms' tumor, it is important to document that the contralateral kidney is present as well as normal in appearance and function. This is usually established on review of the IVP. Surgical removal includes nephrectomy on the involved side, with removal of the primary tumor in its entirety whenever possible. Since five percent of children with Wilms' tumor have bilateral disease,[7] the contralateral kidney should be inspected and palpated at time of surgery. The extent of the tumor should be marked with surgical clips to facilitate the delivery of postoperative radiation therapy and to assist in the followup of the patient for recurrent abdominal disease. The excision of the periaortic lymph nodes has been advocated,[8] but there are no studies that show this to be of benefit in patients treated with adequate adjuvant radiation therapy and chemotherapy.

Microscopically, Wilms' tumor contains varying amounts of undifferentiated spindle cells, epithelial cells, muscle cells, myxomatous tissue, bone, and cartilage. In some cases, there is evidence of primitive tubular and glomerular structures. An analysis of Wilms' tumor histology and correlation with response to therapy has been performed for patients entered on the National Wilms' Tumor Study Group.[9] Results of this study indicate that patients who have a tumor with a significant anaplastic or sarcomatous component have a worse prognosis and response to therapy. In the poor histology group (approximately ten percent of the total number of cases), 57% of patients died of tumor as compared to seven percent of patients with more favorable histology.

Table 2
Grouping of Wilms' Tumor in National Study

Group	Definition
I	Tumor limited to the kidney and completely resected.
II	Tumor extends beyond the kidney and completely resected.
III	Residual nonhematogenous tumor confined to the abdomen.
IV	Hematogenous metastases to lung, liver, bone, etc.
V	Bilateral Wilms' tumor.

The grouping system utilized in the National Wilms' Tumor Studies is outlined in Table 2. The first National Wilms' Tumor Study[7] established the following: 1) In patients with Group I disease treated with adjuvant actinomycin D who were less than two years of age, postoperative radiation therapy to the tumor bed did not produce any added benefit. 2) In patients with Group II and III disease, adjuvant radiation therapy to the tumor bed plus chemotherapy with both vincristine and actinomycin D was superior to radiation therapy plus vincristine or actinomycin D used as single agents. 3) Pre-operative chemotherapy with vincristine did not alter the outcome for a small number of patients.

Review of Group III patients treated on the first National Wilms' Tumor Study suggested that local irradiation of the renal fossa may be sufficient treatment for disease limited to that region, including cases of local spillage.[10] The radiation doses were age adjusted, with infants less than 18 months of age receiving 1800-2400 rads and children more than 40 months of age receiving 3500-4000 rads in weekly doses of 750-1200 rads. The opposite kidney and liver were shielded so that the dose to the kidney did not exceed 1500 rads and that to the liver was not more than 3000 rads. Whole-abdomen irradiation, however, is still recommended for gross, diffuse peritoneal contamination.

The second National Wilms' Tumor Study is evaluating the optimal length of actinomycin D therapy necessary for patients with Group I disease. It is also evaluating the efficacy of chemotherapy with vincristine, actinomycin D, and adriamycin versus vincristine plus actinomycin D for patients with Group II or III disease treated with postoperative radiation therapy. Preliminary results from this study have demonstrated a decrease in relapse rate in patients who have favorable histology Group II/III disease and are treated with the three-drug combination.

In some patients with recurrent pulmonary disease,

successful treatment of the recurrent Wilms' tumor with radiation therapy plus further chemotherapy has been described.[11] In addition, patients with bilateral Wilms' tumor have been successfully treated. The recommended surgical treatment for bilateral tumor is nephrectomy plus removal of tumor on the most involved side with partial nephrectomy with excision of tumor on the least involved side. An attempt should be made to preserve enough kidney tissue for adequate renal function, with bilateral nephrectomy plus renal transplantation being considered only when the disease is very extensive.

In summary, Wilms' tumor is very sensitive to both radiation therapy and chemotherapy, with over 90% of patients with favorable histology expected to survive their disease. Further studies will be directed in part toward defining the optimum dose and schedule of adjuvant treatments in an attempt to minimize potential long-term side effects of therapy.

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The Oral-Facial-Digital Syndromes Reviewed:

The Role of Computerized Axial Tomography in Management

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The oral-facial-digital syndromes (OFDS) are a spectrum of abnormalities consisting primarily of oral and dental abnormalities, digital anomalies, and varying degrees of maxillary and mandibular hypoplasia. The syndromes are frequently associated with speech and motor impairments, mental subnormality, seizures, various structural central nervous system (CNS) anomalies, and death in infancy. Early diagnosis of the disorder and delineation of any associated CNS anomalies are essential for appropriate management as well as family and genetic counseling. We report an infant with an OFDS in which computerized axial tomography (CAT) revealed multiple CNS anomalies and was instrumental in determining prognosis.

Case Report

An infant was born by spontaneous vaginal vertex delivery to a 33-year-old gravida 3, para 1, abortus 1 female. The pregnancy was complicated by premature labor at 34 weeks' gestation, which was treated with terbutaline. The mother received analgesics shortly before delivery at term, and the infant was somewhat depressed with Apgars of 5 and 6 at one and five minutes

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Figure 1
Photograph showing multilobulation of the tongue, clefting of the alveolar ridges, hyperplasia of the frenulum with webbing and a small pedunculated hamartoma.



Figure 2
Typical profile view demonstrating mandibular hypoplasia.

respectively. After receiving oxygen and stimulation, the infant's Apgar score was 8 at 15 minutes. The birth weight was 2,500 gm.

General physical examination revealed scalp and facial ecchymoses and extensive milia. The head was molded with a flat, open anterior fontanelle. Marked hypertrophy and pseudoclefting of the alveolar ridges were present with thick bands of tissue extending from the gingival surfaces to the buccal mucosa. A deep midline cleft of the tongue with a tight lingual frenulum was noted. Smaller lateral clefts of the tongue created multilobulation, and there was an 0.5 cm pedunculated hamartoma on the superior surface of the tongue (Figure 1). The palate was intact. Mild mandibular hypoplasia was present (Figure 2). Cutaneous syndactyly of the fourth and fifth fingers occurred bilaterally (Figure 3). The infant was generally hypotonic, but there were no localizing neurologic signs. The deep tendon reflexes were brisk, and Moro, tonic neck, and grasping reflexes were present.

Laboratory studies including a complete blood count, serum electrolytes and chemistries were within normal limits. Chromosome analysis revealed a normal female karyotype. Chest roentgenograms were normal. Skull x-rays revealed evidence of platybasia. A barium esophagram demonstrated nasopharyngeal incoordination with reflux of barium into the nasopharynx and slight barium aspiration. An electroencephalogram revealed diffuse slowing with repetitive epileptiform discharges appearing bilaterally and burst suppression of the left hemisphere. A computerized axial tomographic scan of the brain showed absence of the corpus callosum and a large porencephalic cyst of the left hemisphere (Figure 4).

The family history was negative, and neither the parents nor an older sibling had stigmata of OFDS. The



Figure 3
Brachydactyly and cutaneous syndactyly.

infant's neonatal course was complicated by periodic respirations, apnea, and difficulty with feeding. Multifocal and generalized seizure activity was observed by nursing personnel, and the infant was started on anticonvulsant therapy, which provided adequate control. In view of the CNS anomalies demonstrated by CAT scan, the family was made aware of the poor prognosis. Delayed development became more obvious, and progressive feeding and respiratory difficulties necessitated several hospitalizations for difficulties necessitated several hospitalizations for failure to thrive.

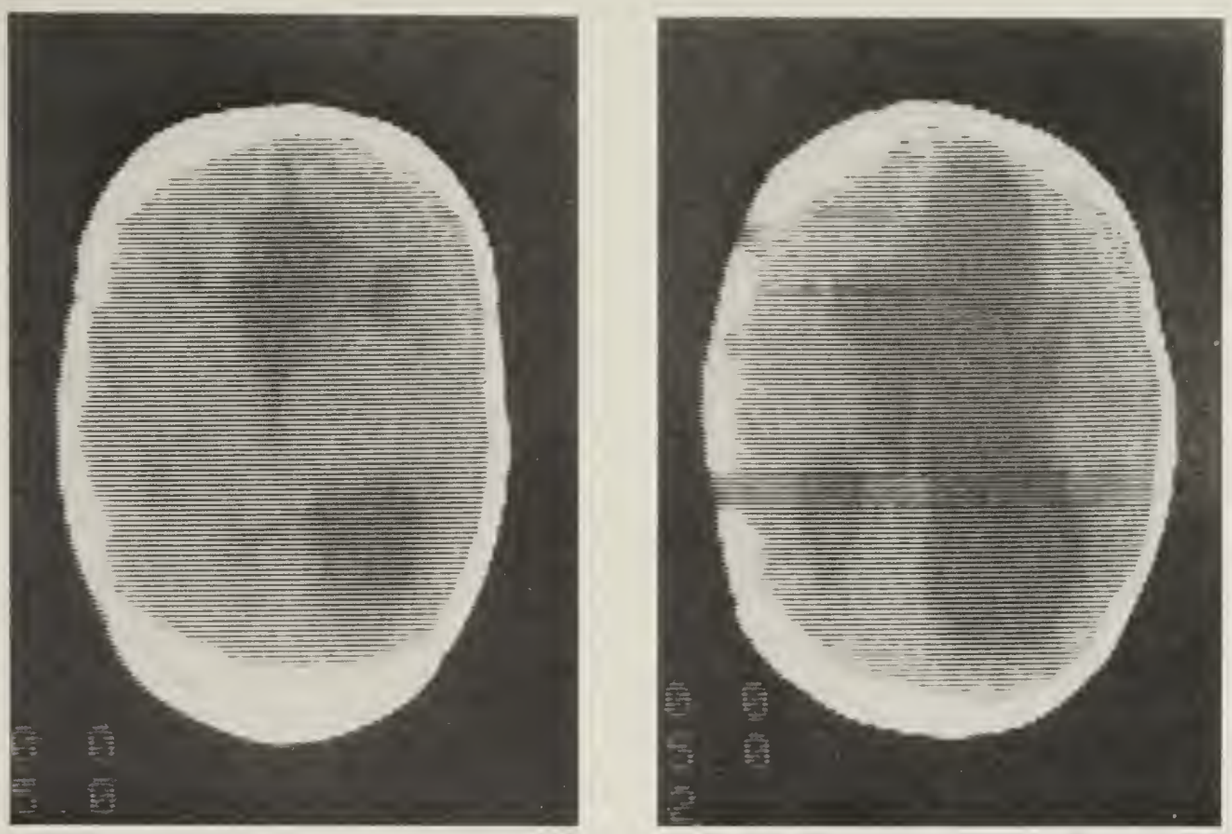


Figure 4
Computerized axial tomographic scan showing absence of the corpus callosum (left) and a large porencephalic cyst of the left hemisphere (right).

Discussion

The association of oral, facial, and digital anomalies undoubtedly occurred long before they were formally recognized as a syndrome complex by Papillon-Léage and Psaume[1] in the French literature in 1954. Gorlin et al[2] in 1961 reported the first English literature cases, and in 1962 the term "oral-facial-digital syndrome" (OFDS) was coined by Ruess et al.[3] Two types of OFDS (Type I and II) have been described. The designation of OFDS-I arose due to the similarity between the oral-facial-digital syndrome and the Mohr syndrome which is now called OFDS-II. A comparison of the two disorders may be found in Table 1.[4] It was previously believed that the two syndromes could be distinguished on the basis of the presence of bilateral polysyndactyly of the halluces and normal intelligence in the Mohr syndrome, but more recent studies have demonstrated an overlap of features between the two disorders. A heterogeneity of oral-facial-digital syndromes has been proposed with questions raised regarding the need for the current classification of two types.[5] For the purposes of this report in which our patient presents the classic features of the OFDS as originally described, further discussion will be limited to OFDS-I.

The occurrence of OFDS-I in the general population is estimated to be one in 250,000 live births although among persons with cleft lip or palate, the incidence increases to 8-16 cases per 1,000.[3,7] Genetic studies indicate that the disorder occurs as a mutant gene that is inherited as an autosomal or sex-linked dominant with male lethality and variable penetrance.[6] There are two reports of live males with OFDS-I:[7,8] One with a 47,XXY karyotype (Klinefelter's) whose existence supports the sex-linked dominance postulate and a 46,XY male who may have represented "disappearing mosaicism" for the OFDS-I gene. The ratio of females to males born to affected mothers is approximately two to one.[6] Based on the above genetic considerations, an affected female is highly unlikely to produce any live sons with the syndrome and has a 50% chance of producing a daughter with the disorder. Parents of an affected infant with a negative family history may be advised that a spontaneous mutation has occurred, and the chance of recurrence is the same as for the general population. The only available prenatal diagnostic tool is amniocentesis for sex determination.

The clinical signs of OFDS-I have been well documented in the literature.[9-11] Classic features include: 1) multilobulated tongue, 2) hyperplastic frenulum, 3) pseudocleft of the upper lip, 4) hypertrophy and clefting of the alveolar ridges, 5) various dental anomalies including absent and supernumerary teeth, 6) clefting of the hard and soft palate, 7) digital anomalies such as brachydactyly, syndactyly, clinodactyly, camptodactyly, or rarely polydactyly, and 8) basilar skull abnormalities. Other features less commonly seen are hamartomas of the tongue, ankyloglossia, hypoplasia of the alae nasi and

Table 1
Differences Between OFD I and OFD II*

	OFD I	OFD II (Mohr Syndrome)
Inheritance	X-linked dominant	Autosomal recessive
Sex distribution	Only female subjects	Male and female subjects
Alveolar ridge	Thick bands	Normal or flaring
Dentition	Absent lateral incisors	Normal or absent central incisors
Nose	Alar hypoplasia	Broad bifid tip
Mandibula	Hypoplasia of ramus of mandible	Hypoplasia of body of mandible
Hair	Coarse and thin	Normal
Skin	Granular or papular lesions	Normal
Digits	Polysyndactyly not present bilaterally	Bilateral polysyndactyly of halluces
Skeleton	Irregular reticular areas of the short tubular bones	Metaphyseal irregularity and flaring
Hearing	Normal	Conductive hearing defect

* *From Rimoin and Edgerton 1967.*

malar bones, milia, alopecia, ocular hypertelorism secondary to dystopia canthus and epicanthus, and polycystic kidneys. The minimal criterion for the diagnosis of OFDS-I appears to be a multilobulated tongue or hyperplastic frenulum with or without brachydactyly.[6]

Neurologic dysfunctions such as tremors, seizures, and mental subnormality are reported to occur in 30-50% of patients with OFDS.[3, 12-14] Significant structural brain abnormalities occur in at least 13% of cases. Wood et al[14] in a review of 13 OFDS cases in females with documented CNS anomalies found 11 to be mentally deficient. One patient had history of convulsions, and another was "normal except for loss of speech." Cerebral abnormalities occurred more frequently than defects in the brain stem or cerebellum, and no lesions were reported in the spinal cord. The most frequent CNS anomalies included intracerebral cysts, absence of the corpus callosum, and cortical hypoplasia. Hydrocephalus was also reported. This study suggests that the degree of mental subnormality correlated positively with the degree of CNS anomalies. Documentation of the CNS defects is, therefore, essential. This has previously been accomplished through the use of invasive neurodiagnostic studies or at necropsy. CAT of the brain in our case proved to be useful as a non-invasive diagnostic tool.

Infancy is a critical time for patients with OFDS. Severely affected children frequently have history of difficult feeding, failure to thrive, and apnea. As many as one-third of these patients die in the first year of life. Modern surgical and dental techniques have simplified the correction of most of the external physical defects, but the overall developmental prognosis and longevity of the child with this disorder is largely dependent on the condition of the central nervous system. Therefore, in order to better counsel families and arrange the best management of the patient with OFDS, one must identify the child with poor prognosis. This can be accomplished by determining the extent of the defects through thorough physical examination and detailed examination of the central nervous system. The authors feel that CAT aids in the overall evaluation of the infant with OFDS. As our case demonstrated, scanning was instrumental in effective counseling of the parents in regard to future expectations, functional capabilities, and an early establishment of a balanced medical, social, and educational program.

Acknowledgement

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Surgery

Diagnostic and Operative Arthroscopy of the Knee

an Analysis of 400 Consecutive Cases

Saul N. Schreiber, M.D.

Editor:
Jack A. Friedland, M.D.

Introduction

On November 15, 1977 I presented to the Medical Staff at Phoenix Baptist Hospital an analysis of 200 arthroscopies, including 36 operative arthroscopies done over the preceeding two years. It is now a minimum of two years, and a maximum of four years since that initial review. The conclusions have been re-evaluated and the lessons learned and their application to the succeeding 200 cases which include 144 operative arthroscopies will be presented.

Arthrography and Arthroscopy[6,9,12]

Between 1975-1977, eighty-two patients were studied with both arthrography using standard technique and Renografin dye with air, and arthroscopy. The arthroscopy was performed with the 5.0 mm Wolf arthroscope. All patients were felt to be having sufficient clinical symptoms to warrant arthrotomy on the basis of their history, physical exam and routine x-rays. In 60 of the 82 patients, arthrotomy was used to verify the diagnoses, while 12 others had arthroscopic surgery.

A. Patients with Abnormal Arthroscopic and Arthrographic Findings

In 55 patients the clinical diagnosis, arthrogram and arthroscopy findings coincided. There were medial meniscus lesions in 47, and lateral meniscus lesions in six patients, while two had bilateral medial and lateral tears. Forty-six of these patients had open surgery, two refused treatment, and seven had treatment by operative arthroscopy. In fourteen patients the arthrogram diagnoses were felt to be incomplete as there were significant erosions of the patella or femoral condyles not diagnosed.

From: 6707 North 19th Avenue, Ste 200, Phoenix, Arizona 85015

B. Patients with Abnormal Arthrogram and Normal Arthroscopy

Six patients - three with Baker's cysts; two with posterior horn medial meniscus and one with a posterior cruciate tear, diagnosed on arthrography, were felt to be normal on arthroscopy. At this time separate postero-medial approaches into the knee joint with the arthroscope were not being done, nor was probing of the meniscus routinely done.

C. Patients with Normal Arthrograms and Abnormal Findings at Arthroscopy

Nineteen patients had significant findings at arthroscopy not found on arthrography. These included four patients with loose bodies found (and removed) at the time of arthroscopy, and four patients with arthroscopic findings of subluxed patella. Four patients had lateral meniscus tears missed, five had medial meniscus tears missed, and in two patients bilateral tears were not diagnosed. (Fig.1) The numbers of missed diagnoses in patients where clear pathology existed, limits the usefulness of the arthrogram.

D. Two patients had normal Arthrogram and Arthroscopies and no further surgical treatment was contemplated

In the subsequent series of 200 patients, arthrograms were obtained in six patients - primarily for comparison with previous arthrograms. The probing of menisci with blunt or hooked instruments to expose pathology (Fig. 2, a,b,c.) and the use of multiple arthroscopic approaches has raised the accuracy of arthroscopy to where arthrography has less to offer than in the past.

After the initial series of 82 patients who had both arthrography and arthroscopy, an additional 118 patients had arthroscopy alone. Forty-eight patients had meniscal tears removed by arthrotomy after being diagnosed with the arthroscope, while six had partial meniscectomies performed with operating tools placed into the joint either through the scope or through separate small openings into the joint. (Fig.3, a.b.) In the second series of 200 arthroscopies medial or lateral meniscus pathology was diagnosed 98 times and arthroscopic debridement of the torn areas or partial meniscectomies were performed 88 times, arthrotomy being done ten times. In the patients for whom operative arthroscopy was done average hospital stay for 74 was 2.2 days (14 had the surgery as an out patient procedure). When arthrotomy was needed the average hospital stay was 4.4 days.

Lateral Subluxation of the Patella[5,10,11,13]

This diagnosis was made in 11 patients of the first two hundred, and in 24 of the second series. The chief complaint is of anterior knee pain, a feeling of giving way often associated with a feeling of crepitus about the patella. The symptoms are caused by the patella being mal-aligned and sitting over the lateral femoral condyle. This can be demonstrated by the "sky-line" patellar view (Fig. 4a) which is taken with the knee flexed 30° and the x-ray beam placed in line with the tibia. Once diagnosed,

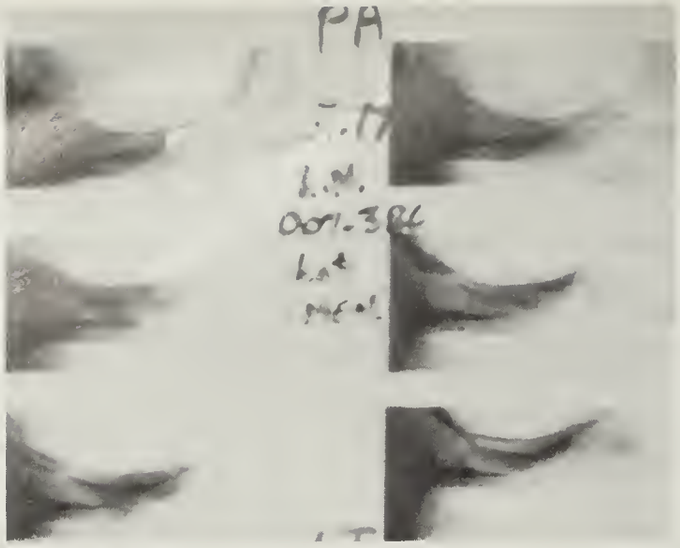


Figure 1
a - Arthrogram showing normal lateral meniscus



b - Arthrogram showing normal medial meniscus



Figure 2
a - Photograph of normal appearing edge to medial meniscus.



b - Probe overlying medial meniscus.

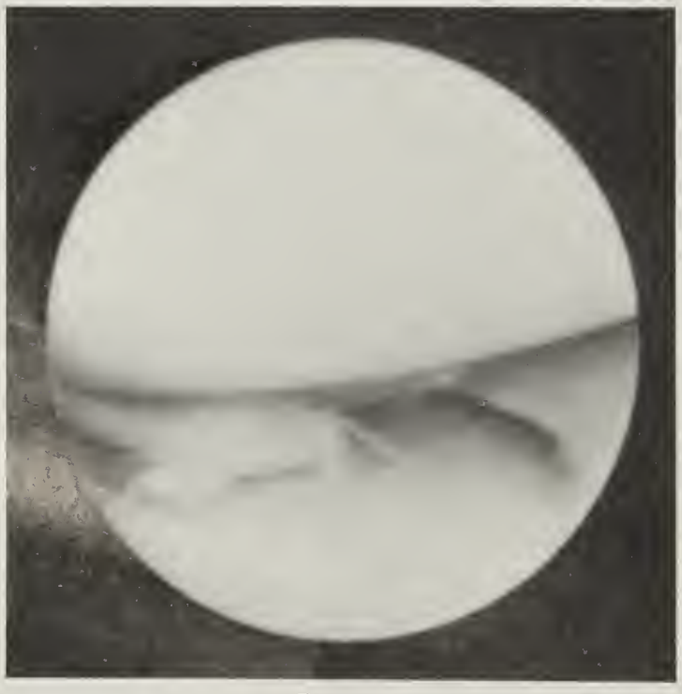


Figure 3
a - Posterior horn tear medial meniscus.



b - Debriding rongeur as seen coming through synovium to remove torn portion of meniscus.



c - Photogrpah of posterior horn multiple tears medial meniscus



d - Photograph showing degenerate and torn lateral meniscus



c - Peripehral tear of medial meniscus - seen from undersurface.





Figure 4

a - Xray - "sky-line" patellar view - showing patella subluxed over lateral femoral condyle.

b - Arthroscopic view showing patella subluxing laterally over the lateral femoral condyle.





Figure 5
a - Large irregular loose body - beneath patella.

b - Two smooth losse bodies as seen through the scope.



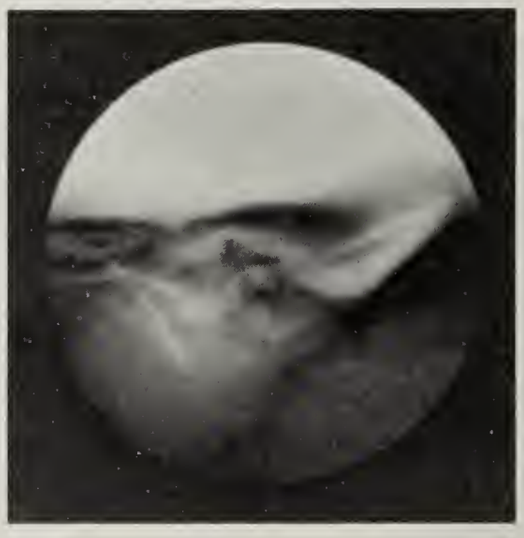


Figure 6
a - Large irregular cartilage fragment protruding from articular surface of the patella.

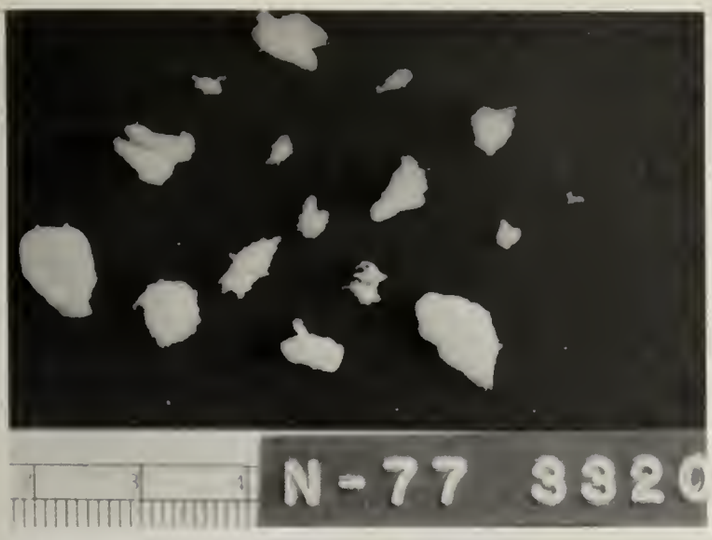
b - Another pattern of articular surface erosion.





Figure 7
a - Partial tear anterior cruciate ligament - acute.

b - Complete tear anterior cruciate ligament.



c - Multiple loose bodies removed via arthroscopic surgery - done as out-patient procedure.



c - Deep crater seen on patellar surface after separation of a "loose body."

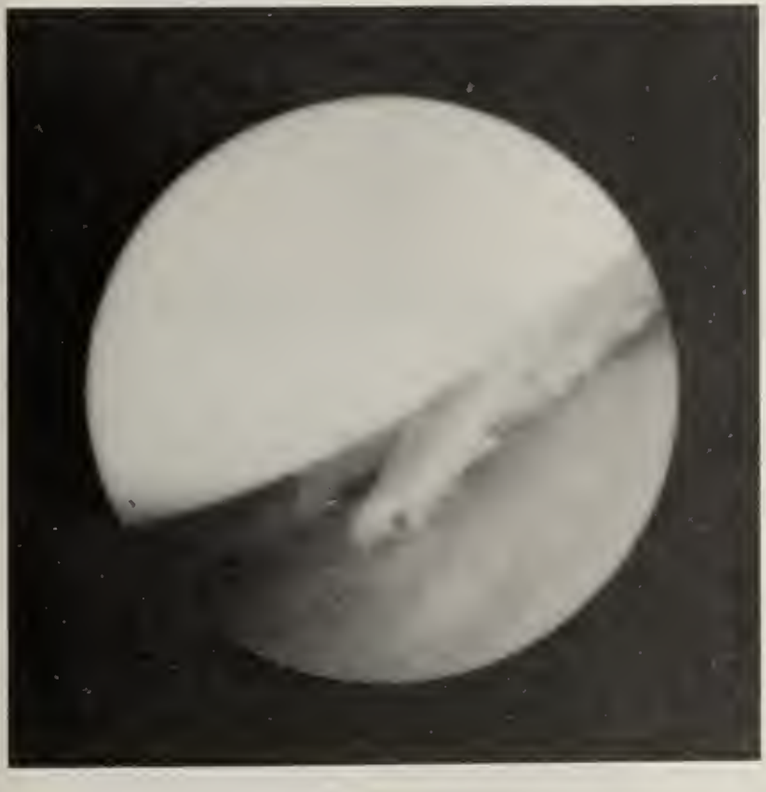


Figure 8
a - Acute tear medial meniscus.

all patients should be treated conservatively with an exercise program for a minimum of three months. If symptoms persist, arthroscopy can confirm the clinical diagnosis, (Fig. 4b) and a lateral release of the capsule, synovium, and vastus lateralis be done by arthroscopic surgery. This has yielded excellent results in ten of the eleven initial patients so treated with an average follow-up of 2.5 years. One patient had mild persisting ache. Twenty-two of the twenty-four patients with an average follow-up of one year have had excellent results with return to all activities.

Loose Bodies within the Knee Joint

Six patients in the first series, and 13 in the second series had a diagnosis of loose bodies in the knee joint. Symptoms were of intermittent clicking, swelling, giving way, and pain felt in varying areas of the knee. These, if cartilagenous and not visible on routine x-rays, are difficult to diagnosis on an arthrogram, as air bubbles simulate them. For the first six patients these were removed in the hospital—for the last 13 these have been removed as an out-patient procedure—except for one patient who was 84 and had a partial medial meniscectomy as well. (Total hospital stay was four days) (Fig 5. a,b,c.)

Chondromalacia Patella[1,2,6,7]

Patellar pain, difficulty bending the knee, recurrent fluid and crepitus were persistent in seven patients in the first series, all of whom had arthroscopy and patellar shaving as an in hospital procedure—average hospital stay 2.1 days. Twenty-one patients had out-patient arthroscopy and patellar shaving (five of these had loose bodies removed at the same time) in the second series. The use of a motorized "shaver" to smooth the surface and remove debris (Fig. 6a, b.) has facilitated this procedure greatly. When a crater like defect is already present (Fig. 6c) drilling with a power drill of the underlying bone can also be accomplished through a separate stab wound.



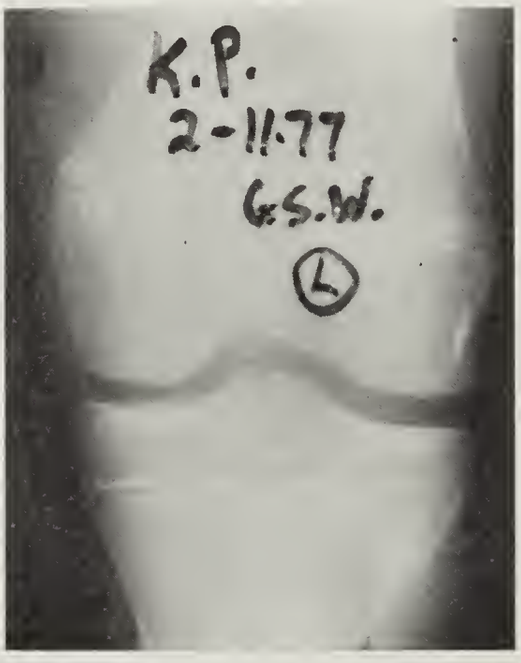
b - Another acute injury.





Figure 9
a - Photograph of pigmented villomodular synovitis tumor in suyprapatellar pouch. Note hemosiderin pigment stippling of synovium.

b - Gross specimen removed at open arthrotomy.



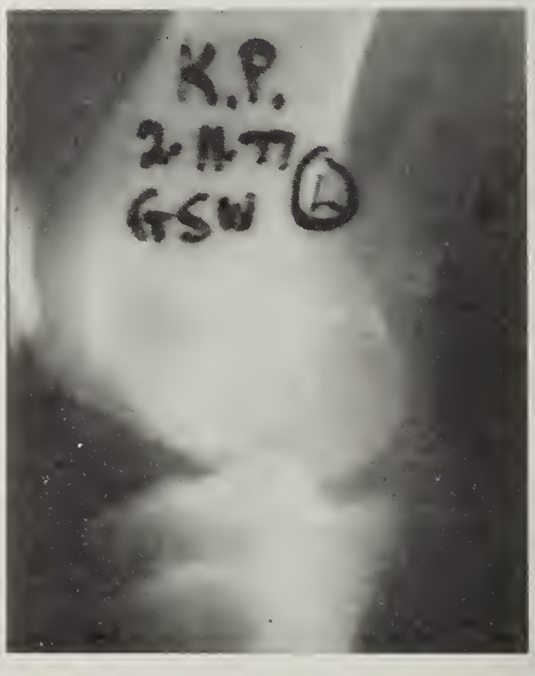


Figure 10
a & b Xray, AP and lateral showing track of bullet through medial femoral condyle.





c - Appearance of bullet entry wound into medial femoral condyle.

d - Rongeur in bullet track - debriding wound.

Arthroscopy in Acute Trauma to the Knee

In only six of the first 200 arthroscopies, but 29 of the second 200 was arthroscopy done on a knee acutely injured and with a hemarthrosis. The value of early accurate diagnosis has been reported by a number of authors.[2,4,15]

Fourteen of the 29 were found to have either partial tears of the anterior cruciate ligament (Fig. 7a) or complete tears (Fig. 7b). The ligament can then either be repaired promptly if indicated, or if the knee is stable and the patient older, resected through the scope. Acute meniscal injuries (Fig. 8a,b) can be accurately evaluated. Tears within the substance of the meniscus should be treated by partial meniscectomy. Peripheral tears at the junction of the synovium and the meniscus should be given a chance to heal by casting for from 4-6 weeks, or by peripherally suturing the torn meniscus - meniscorhesis.[3,7] With acute meniscal tears and partial meniscectomy by operative arthroscopy some patients have returned to their light work within three days of surgery.

Other Indications for Arthroscopy

Two patients with rheumatiod arthritis underwent partial synovectomies by use of the operating scope.[8] In these instances the debriding rongeur and motorized debriding instruments were used to remove the synovium. Straight leg raising and knee range of motion were started on the first day post op. Both patients had hemarthroses postop, but had quick and relatively pain free recovery of functional range of motion and felt improved. It is felt that even though less complete than open synovectomy —the ease of recovery would, I feel, make it worthwhile for the patient to have two or even three partial synovectomies by the operative arthroscopy technique than by the open method.

Three patients were found to have diffuse arthritic changes in their knees out of proportion to what was expected, and were felt to be candidates for knee replacement surgery if symptoms could not be controlled conservatively.[14]

Six patients were found to have a "shell" over the medial femoral condyle. This band of tissue from the suprapatellar pouch extends over the medial femoral condyle and connects to the fat pad anteriorly. It can produce anteromedial knee pain, and give rise to chondromalacia patella. It was seen in only two of the first 200 arthroscopies (I feel it was present in more, but not recognized), and in 24 of the next two hundred. In six of the last 24 patients it has been removed, twice in conjunction with arthrotomy and in four times via operative arthroscopy. In four of those patients it was felt to be the primary abnormality within the joint.

Unusual Problems solved with Arthroscopy[13]

J. E., a healthy 17-year old white male presented with recurrent effusion in his right knee with no history of trauma. Medical work-up, ESR, and routine x-rays were normal. Arthroscopy showed hypertrophic synovium, much darkened blood in the joint, and pigment deposits in the synovium. (Fig. 9a) Pathology of the biopsy specimen taken through the scope confirmed a pigmented villonodular synovitis of the suprapatellar pouch. Open synovectomy (Fig.9b) was properly planned, after evaluation with the family and the patient.

K.P., a healthy 15-1/2 year old white male was referred with a through and through gun shot wound of the medial femoral condyle. (Fig. 10a, b). The bullet entered medially and adjacent to the patellar tendon, and exited postero-medially. The scope was placed into the joint *through* the bullet wound, after debriding the skin edge, and bullet wound of the medial femoral condyle visualized. (Fig. 10c) A debriding rongeur was passed (Fig. 10d) and all visible foreign material removed. This was then repeated through the posterior wound. The joint was irrigated copiously and the wound left open. The patient left the hospital in five days, and recovered full function.

Summary

There have been no instances of deep infection in this series. Two patients had superficial redness about the arthroscopy site that had to be closed with a Dexon suture and responded to suture removal and warm soaks.

There were no cases of deep vein thrombosis or phlebitis. Patient hospital time post meniscectomy was one-half when accomplished arthroscopically as compared with open arthrotomy. The small incisions allow not only a cosmetically improved appearance to the knee, but also allow early rehabilitation. Virtually all patients are straight leg raising on the day of surgery or the first postop day.

With increasing experience with the techniques of operative arthroscopy, more procedures including patellar shaving, extensor mechanism realighment, removal of loose bodies and even meniscectomies are being done as out patient rather than in patient procedures. The resultant cost, saving of hospitalization, and the early rehabilitation and return to functional activities, will establish new criteria for the evaluation of knee problems.

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Special Articles

Comparing the Attitudes and Opinions of Arizona Physicians and Consumers

Stephen W. Brown

Physician-patient rapport is fundamental to good relationships between the two parties. Various authorities have argued that the patients' inclination to sue for medical malpractice often stems, in part, from poor physician-patient rapport. Rapport is dependent on both groups understanding one another. Toward this end, this article presents a comparison of physician and consumer attitudes and opinions.

This article is the fifth in a five part

Dr. Brown is Professor of Marketing at Arizona State University. As an expert in survey research and professional services, he also serves as a consultant to various health organizations, businesses, and associations.

Table 1
Attitudes of Consumers and Physicians Toward Physicians and Health Practices*

Statement	Attitude* Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
a. Most doctors (physicians) are ethical and responsible people.	49.5 (77.6)	39.8 (20.1)	4.4 (1.0)	4.2 (1.2)	2.1 (0.0)
b. Most doctors (physicians) are *not* very competent.	4.6 (1.2)	9.8 (2.6)	10.4 (1.4)	38.1 (18.2)	37.1 (76.4)
c. In most malpractice suits, the doctor (physician) is *not* at fault.	9.9 (28.9)	22.0 (46.8)	42.8 (15.7)	18.1 (7.9)	7.2 (0.3)
d. Most doctors (physicians) are more interested in making money than the well being of their patients.	11.9 (2.2)	19.3 (9.6)	14.2 (9.1)	29.3 (36.0)	25.4 (42.9)
e. In general, doctors (physicians) do a poor job of explaining medical problems to patients	27.6 (6.7)	22.9 (48.1)	8.9 (11.9)	25.3 (24.8)	15.4 (7.8)
f. I would like to have brochures available from my doctor (for my patients) explaining medical problems.	49.6 (31.7)	21.0 (22.0)	7.6 (33.9)	12.7 (5.3)	9.1 (6.0)

**Findings from physicians are expressed in parentheses.*

series on consumer and physician attitudes and opinions toward physicians, health care, and medical malpractice. Previous articles in the series have focused on the two groups separately. This article reviews some of the findings from previous pieces, while also offering a comparison between physician and consumer observations.

The recognition that physician-patient rapport closely relates to malpractice suits led the Ad Hoc Malpractice Insurance Crisis Committee of the Arizona Medical Association to commission a study. The objective of the study was to examine the opinions, attitudes, and behavior of consumers toward health care and physicians services, especially as they may impact on malpractice suits. Before the study was finalized, the Committee asked that its scope be expanded to include physicians.

Survey Methods

Two surveys were conducted as a part of this study -a consumer survey and a physician survey. The consumer survey was conducted via a telephone questionnaire administered to a random sample of 1,000 adult residents of Arizona during May and June of 1979. More specifically, 546 respondents were sampled from metropolitan Phoenix and 251 from metropolitan Tucson. The remaining 200 respondents came from various communities outside the state's two population centers. A sample of 1,000 adults is statistically reliable and offers a good base for making inferences about the Arizona adult population.

The physician survey was administrated in May via the mail to a sample of 1,000. The sample was randomly generated by the Arizona Medical Association from the membership roster. Five hundred ninety-one physicians responded to the survey. This response rate is more than adequate to make inferences about Arizona physicians as a whole.

The questionnaires for the two surveys were developed through the assistance of several sources, including the responses to a preliminary survey, existing studies on health care and physician services, the judgments of the Association's Ad Hoc Malpractice Insurance Crisis Committee, staff, public relations consultant, and the expertise of this author. Many of the questions on the two surveys were identical or similar, enabling one to make the comparisons contained in this article. Accompanying the physician questionnaire was a cover letter from ArMA President, William E. Crisp, M.D.

Attitudes Toward Physicians and Health Practices

Both consumer and physician questionnaires contained statements to measure attitudes toward physicians and health practices. Table 1 shows that both

Table 2
Consumer Attitudes Toward Physicians and Health Practices Compared with Physician Perceptions of Consumer Attitudes Toward the Same

Statement	Attitude* Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
a. Most doctors (the public feels that most physicians) are ethical and responsible people.	49.5 (36.0)	39.8 (54.9)	4.4 (5.3)	4.2 (3.3)	2.1 (0.5)
b. In most malpractice suits, the doctor is *not* at fault (The public feels that physicians are *not* at fault in most malpractice suits).	9.9 (3.1)	22.0 (28.9)	42.8 (24.8)	18.1 (35.5)	7.2 (7.4)
c. Doctors (the public feels that physicians) charge too much for the services they provide.	40.3 (27.5)	22.6 (56.8)	13.7 (9.1)	14.0 (4.5)	9.5 (1.4)
d. Most doctors (the public feels that (physicians) are more interested in making money than the well-being of their patients.	11.9 (2.2)	19.3 (9.6)	14.2 (9.1)	29.3 (36.0)	25.4 (42.9)
e. In general, doctors (the public feels that physicians) do a poor job of explaining medical problems to patients.	27.6 (19.3)	22.9 (57.3)	8.9 (13.3)	25.3 (8.6)	15.4 (1.6)

The physicians results (expressed in parentheses) represent their* **perceptions *of how the public views physicians and health care.*

groups have a high regard for doctors as ethical and responsible people. Furthermore, the vast majority disagree with the observation that doctors are *not* very competent. Nevertheless, a small, but potentially significant minority of consumers concur with statement "b" in the table.

In statement "c" doctor wrong-doing in malpractice suits is addressed. Although physicians clearly feel that doctors are *not* at fault in most malpractice suits, the largest group of consumers (close to half) selected the neutral position. The neutral responses coupled with the "somewhat" agree and "somewhat" disagree percentages indicate an uncertainty on the public's part.

The income of physicians naturally results in some public scrutiny. The vast majority of doctors and just over half of the consumers disagree with statement "d". . . "doctors are more interested in making money than the well being of their patients." Close to a third of the consumers, however, agree with this observation indicating perhaps why a segment of the population is willing to support significant changes in patient-physician relationships.

Physician-patient communications are explored in the final two statements in Table 2. A sizeable segment of both consumer and physician samples feel that doctors do a poor job of explaining medical problems to patients. Consumers, however, are much more inclined to "strongly agree." This communication problem deserves prompt ArMA attention in that it has been suggested that a primary source of patient dissatisfaction, and the inclination to sue for malpractice, stems from poor physician-patient rapport. One possible solution to the apparent communications problem is presented in statement "f" in

Table 1. Various observers have touted the use of medical brochures for patients written in lay language. Consumers would obviously support the availability of such literature. Although a third of the physicians' sample was neutral, over half support the brochure concept.

Consumer Attitudes and Physician Perceptions

In this section consumer attitudes toward physicians and health practices are again presented. These attitudes, however, are compared to doctors' *perceptions* of how the public views physicians and health practices. Table 2 displays these comparative findings.

The first statement in the table indicates that physicians have accurately assessed the public's confidence in them as ethical and responsible people. As a matter of fact, consumers were more likely than physicians to "strongly agree" that "most doctors are ethical and responsible people." In the second statement on malpractice wrong doing (see table), the physicians reasonably judged the "agrees," but failed to realize the substantial number of neutral responses from consumers.

The topic of physician fees is explored in statements "c" and "d" in Table 2. Although consumers are more inclined to "strongly agree" that doctors charge too much for the services they provide, the physicians have again quite accurately read this source of public discontent. perhaps various ArMA communications should demonstrate to the public that a large share of the fees paid go to cover various expenses associated with patient care. The results in statement "d" suggest that physicians have underestimated their apparent "money hungry" image among close to a third of Arizona consumers.

The last statement in Table 2 indicates that physicians feel they have more of a communication problem with patients than consumers suggest. Despite this overstatement, the communications problems are genuine and obviously contribute to other problems, including malpractice suits. Physicians' awareness of the problem is a good sign and suggests they should be receptive to potential programs to improve communication effectiveness.

Consumer Preferences/Behavior and Physician Perceptions

The preferences and behavior of consumers are compared with physician *perceptions* of the same in this subsection. Table 3 notes these matchings. The comparisons in this area are relatively tenuous in that parallels are being drawn between consumers' personal preferences/behavior and physicians' perception of the *public's* preferences/behavior.

Table 3
Consumer Preferences and Behavior Toward Health Practices Compared with Physician Perceptions of Consumer Preferences and Behavior Toward the Same

Statement	Attitude* Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
a. I (the public) often reads newspaper and magazine articles about health topics.	32.1 (70.1)	40.5 (27.9)	4.6 (1.6)	12.3 (0.5)	10.5 (0.0)
b. I (the public) often watch TV programs that discuss health.	25.2 (47.5)	34.9 (40.1)	5.0 (9.3)	17.1 (2.4)	17.7 (0.7)
c. I (Patients) would like to have brochures available from my doctor (my office) explaining medical problems and treatments.	49.6 (32.2)	21.0 (38.2)	7.6 (23.9)	12.7 (4.0)	9.2 (1.2)

**The physician results (expressed in parentheses) represent their perceptions of how the public views the three statements.*

Table 4
Consumer and Physician Opinions Regarding Factors Contributing to the Malpractice Insurance Crisis

Question: What do you think has caused the cost of malpractice insurance to be so high?

Factors Mentioned	Percent of Respondents Mentioning* Consumers	Physicians
Doctors themselves at fault	19.5	21.7
Lawyers at fault	13.7	52.8
Court/judicial system at fault	16.6	31.0
Insurance companies at fault	2.8	15.2
Number & dollar amounts of suits being filed	44.2	38.2
Greediness of patients	32.8	23.2
High expectations of patients (expect a lot from doctors)	—	11.4
Other	1.3	28.7

Question: In your opinion, why do patients sue doctors?

Factors Mentioned	Percent of Respondents Mentioning* Consumers	Physicians
Greedy people bringing unwarranted suits	50.7	41.5
Doctors making mistakes	45.3	59.7
Greedy lawyers encouraging suits	14.5	22.7
Publicity associated with big settlements	7.1	4.7
Juries/judges awarding big settlements	4.6	—
Inflation, cost of medical care, etc.	3.5	7.9
Anger, frustration, etc.	—	28.2
Other	5.0	33.6

**Columns sum to over 100 percent because of multiple responses to the question.*

Statement "c" is perhaps the most useful to look at. Most consumers would like to have medically oriented brochures available from their own doctor. Furthermore, a like percentage of physicians perceive that their patients would appreciate the availability of such literature.

Consumer and Physician Opinions on Malpractice

Table 4 illustrates the opinions of the two samples on two questions related to the malpractice crisis. The first half of the table shows that physicians are more likely to attribute malpractice insurance costs to lawyers and the court/judicial system, while the number and dollar amounts of suits along with patient greed was a more common explanation among consumers.

On the question, "why do patients sue doctors?" some parallels are seen (see second half of the table). Nevertheless, physicians were more inclined to note the mistakes of their colleagues, while consumers most often cited patient greed.

As highlighted in earlier articles, various proposals have been advanced as possible actions to relieve the malpractice problem. Table 5 shows consumer and physician sentiment for five proposals. Physicians should be pleased to learn that their favorableness for all five proposals is mirrored by consumer support. Less than a majority of consumers, however, supported the lid on malpractice claims (statement a). The comparative responses to statement "b" are intriguing. More physicians than consumers were actually favorable toward the proposal of spending more time explaining medical problems to patients. Although practical considerations may impede such a move, ArMA could help the membership explore how to spend more time and communicate better with patients. Physician and consumer reaction to the last three proposals in Table 5 indicates public support for legislation of this nature.

Table 5
Consumer and Physician Reactions to Proposals to Help Solve the Malpractice Problem

Proposal	Opinion* Strongly Favor	Somewhat Favor	Neutral	Somewhat Against	Strongly Against
a. A law stating that the maximum amount of money that could be received by patients with malpractice claims is $500,000.	20.8 (39.1)	21.3 (21.3)	28.9 (13.1)	13.8 (11.4)	15.3 (13.1)
b. Greater time is spent by the physician in explaining the potential problem of a particular medicine or operation.	63.4 (53.2)	18.4 (31.0)	11.8 (10.5)	4.3 (3.6)	2.2 (1.2)
c. A law requiring that all disputes between patients and physicians be submitted to a panel of expert physicians and lawyers for arbitration.	48.1 (73.2)	17.7 (17.6)	17.5 (4.8)	6.6 (2.2)	10.1 (2.1)
d. A law limiting the percentage of the settlement that lawyers could receive.	69.0 (86.6)	10.6 (7.6)	11.1 (3.3)	3.9 (0.9)	5.3 (1.6)
e. A law requiring that a malpractice claim be reviewed by a panel of expert physicians and lawyers before going to court.	63.3 (84.0)	14.6 (13.0)	12.1 (1.6)	3.9 (0.3)	6.2 (1.2)

**Opinions from physicians are expressed in parentheses.*

Conclusion

This article concludes a series that has appeared over the past five months in *Arizona Medicine*. The study examined consumer and physician attitudes and opinions toward physicians, health care, and medical malpractice. The catalyst for conducting the study was the belief that consumer-physician understanding is fundamental to easing the malpractice problem.

The first article in the series appeared in December 1979 and overviews the methods and findings from the complete study. The January and February articles offer in depth insight on the results from the consumer survey. The physician survey responses are the focus of the March article. This month's article offers a comparative analysis of the findings from both consumer and physician samples. Together, the series provides the interested reader with a comprehensive view of the public's and physician's opinions and attitudes.

Reference

1. The five articles are derived from the report "Consumer and Physician Attitudes Toward Physician Services, Medical Malpractice , and patients." The report was submitted by this author to the Ad Hoc Malpractice Insurnace Crisis Committee of ArMA in August 1979.

The United States Medical Student Abroad

A View from South of the Border

George D. Comerci, Jr., B.S., R.Ph.

Synopsis - Abstract

The federal government and organized medicine have no definite policy regarding U.S. students enrolled in foreign medical schools. Many qualified medical school applicants are not accepted into U.S. medical schools; the ratio of qualified to accepted applicants is estimated to be about two to one. Many U.S. students studying abroad attempt, after two years, to transfer to an American Medical School.

Beginning in 1980, applicants will be required to take the new Medical Sciences Knowledge Profile Examination (MSKP) to replace the National Medical Board Examination -Part I (NMBE-I) taken in the past.

Most U.S. citizens studying Medicine in foreign countries are highly motivated and dedicated individuals who hope to complete their medical education in the United States. A definitive policy on the part of organized medicine and government regarding these students is desperately needed.

The United States government and its medical establishment are presently faced with various serious problems including, how to efficiently deliver health care to all individuals, and how to solve the enigma of physician maldistribution. During the last decade another important problem with potentially far reaching consequences has arisen: the reentry into the United States of U.S. students attending medical schools in foreign countries. Our federal government and organized medicine in the United States have no definitive policy regarding the more than six thousand U.S. medical students abroad (USMSA).[1] Moreover, an almost xenophobic attitude of certain government agencies, medical organizations, and medical schools provokes feelings of frustration, confusion, anguish, and at times alarm in many of these students. Present trends in U.S. medical-political policy, tending to disfavor the USMSA, are particularly disturbing. Many highly motivated and dedicated, as well as qualified U.S. citizens studying medicine abroad are concerned about their future careers as physicians in the United States.

Each year, there are many qualified medical school applicants that are not accepted into U.S. medical schools. The definition of a qualified applicant varies amongst individual schools, but it can be estimated that the ratio of qualified to accepted applicants is about two to one. The ratio of total applicants to available positions approaches three to one.[2] It is generally agreed that a significant number of USMSA represent individuals who "were qualified, but were not qualified enough," reflects an unusually strong motivation to study medicine and a dedication to medicine as their chosen profession.

After attending a foreign medical school for one or two years the USMSA may apply to a U.S. medical school to replace students lost by attrition. In the past, a passing score on several or all areas of the National Medical Board Examination Part-1 (NMBE-1) was usually required before an individual's application was considered. Beginning in 1980, applicants will be required to take the new Medical Sciences Knowledge Profile Examination (MSKP). The American Association of Medical Colleges (AAMC) in cooperation with the National Board of Medical Examiners has developed the examination which will replace the NMBE-I for USMSA. The examination will be sponsored by the AAMC and is intended to determine the level of achievement of students in the basic medical sciences. Consideration is being given to a special section to evaluate introductory knowledge relative to clinical diagnosis. The level of the student's performance will be available to medical schools, but there will be no passing score on the examination. Considering that the number of American medical students who qualify for transfer positions in this country is approximately 800 to 900 per year, opportunities for transfer to U.S. medical schools are severely limited.[3]

Accurate statistics regarding the fate of the USMSA and the options they choose in order to re-enter the American medical-educational system are not available. The majority of USMSA graduate from the foreign medical school after four years of study. Some medical schools, such as the Autonomous University of Guadajara (U.A.G.), allow their students to receive their fourth year of medical training in stateside hospitals that are willing to accept them. A qualified graduate, after passing the Educational Council for Foreign Medical Graduates examination (ECFMG), may enroll in a "Fifth Pathway" program in the United States. This program represents a year of intense supervised clinical experience at a participating U.S. hospital that enables the student to reduce deficiencies in the clinical sciences and serves to introduce the student to medicine as practiced in the United States. This route is not obligatory. The student may bypass it; performing an internship in the country where he/she studied medicine and, after passing the ECFMG examination, complete postgraduate training in the United States. The method of applying for residency programs in the United States is the same as that utilized by graduates of a U.S. medical school.

The quality of the USMSA entering the United States by any of these routes is a major concern of U.S. physicians and health planners. The USMSA views this question as legitimate but puzzling. Why had this concern not been expressed in the past, when large numbers of foreign medical graduates (FMGs) were welcomed as housestaff and later licensed to practice in the United States? Equally puzzling is the fact that large numbers of transfer students have been accepted into U.S. medical schools when a need arose or if it became financially or politically convenient to do so.

Several reports examining the performance of U.S. foreign-educated students and physicians on standardized examinations and in clinical settings have appeared in the leterature.[1,4,6] Some have shown that the USMSA performed significantly poorer on the NMBE-I, FLEX, and ECFMG examinations than their U.S. educated counterparts.[1,7] These data, however, were not corrected to exclude the NMBE-I scores of many USMSA who took the examination after only one year of study. This likely resulted in the reporting of a lower pass percentage than would have been reported had this factor been considered. Weinberg and Bell suggest that the test performance of USMSA is poorer than their U.S. educated couterpart, regardless of the route taken back into the United States.[1] Stimmel and colleagues found that students accepted into advanced standing through COTRANS into their curriculum performed in a manner comparable with students accepted with advanced standing from American medical schools and to those students initially accepted into the first year of their medical curriculum.[8] These investigators further concluded that "carefully selected students completing the first two years of basic science in a foreign medical school can successfully compete with students already enrolled in

From: 3300 North Drake Place, Tucson, AZ 85715 (Mr. Comerci is a student at Autonomous University of Guadalajara [U.A.G.], Class of 1982.

the American medical curriculum." Moreover, a study conducted for the U.S. Department of Health, Education, and Welfare in Maryland concluded that on the attending level, there is no measurable difference in quality of medical practice between foreign medical graduates and U.S. medical graduates.[9] [10] An audit of the performance of over one thousand attending physicians at twenty-two acute care hospitals in Pennsylvania and Maryland showed that "the hospitals were the variables, not the doctors."[11] Although the majority of studies in the literature tend to disfavor the USMSA, valid conclusions must await more carefully designed studies.

It is difficult, if not impossible, to objectively compare foreign medical schools with those in the United States; presenting yet another obstacle to accurate quality assessment of the USMSA. The medical education system of a country reflects its national character and specific internal health needs. It is unreasonable to compare one foreign medical school with another. The Autonomous University of Guadalajara (U.A.G.), under the direction of Nester Velasco P., M.D., Ph.D., has become a standard of excellence among Latin American Medical Schools. Students attending well established and high quality schools such as the U.A.G. feel they are judged unfairly when their school is included amongst other foreign medical schools without such a reputation. It is impossible to compare and contrast U.S. medical schools with all of those abroad. Such comparisons further impede the accurate assessment of the quality of the USMSA.

Although statistical data are lacking, it can be assumed that the majority of USMSA complete their education, pass the necessary examinations and enter the mainstream of U.S. medical practice. They will continue to do so as long as the various re-entry pathways exist. Greater effort should be made to return the qualified USMSA to the U.S. as early in his/her undergraduate medical education as possible. Early re-entry will make maximal the student's exposure to the unique medical education system in the United States allowing for greater influence on the student's education, training and future performance as a physician. Such USMSA re-entry could occur after two years of basic science study in a foreign medical school and following demonstration of an adequate basic medical science knowledge base as measured by the MSKP (and as defined by the basic science departments of the participating U.S. medical school). If this effort is to succeed, U.S. medical schools must be willing to absorb the USMSA into their clinical programs. Since a significant number of USMSA will eventually re-enter the United States and because there are justifiable concerns regarding the quality of clinical training these students experience, this approach seems to be the most efficient and logical one. An argument against this assumption is made by those who believe clinical faculty and facilities are unable to accomodate any increase in the number of clincal students. Thus, implementation of a program of this kind may require expansion of medical school clinical programs.

The threatened oversupply of physicians in the United States has not been firmly established and is certainly controversial.[12] [13] The effect of restricting the entrance of FMGs into the United States is already manifest in physician vacancies in inner-city hospitals and in some residency programs.[14] [15] The distribution of physicians to underserved rural and inner-city areas is, at best, inadequate and will probably not be remedied in the immediate future. Furthermore, in the opinion of this author, the likelihood of some form of national health insurance in the near future will further reduce the number of medical school aspirants and simultaneously increase the need for health care providers.

The increased size of the national physician pool brought about by incorporation of USMSA into the system could provide the needed physicians for inner-city and rural health care. Additional candidates for current and projected vacancies in primary care residency programs may also be provided. The increased size of the physician pool plus the proposed restriction of subspecialty residency positions *may* encourage new physicians to populate underserved areas. Finally, an increased physician pool *may* tend to reduce the income of practicing primary care physicians but may allow more physicians to enjoy a shorter work week and a more normal life style. Current data *do not* support these positions, but as pointed out by Keith Leffler in *The Wall Street Journal*, "Nearly all facts about the market for physicians suggest a market closely regulated by the classic forces of economics."[16] Neuhaus feels that worries about an over supply of physicians are groundless: "supply adjusts to demand."[14] He goes on to state that, "past governmental interference in the medical market has been responsible for high and rising costs; proposals for full coverage national health insurance would raise costs of physician services further." Enlarging the pool of *primary care* physicians would, because of the nature of their practice as compared to the specialist, almost certainly cause them to seek out underserved areas.

The effect that: 1) restricted entrance of FMGs into the United States; 2) increased entrance of USMSA into the United States; and 3) a national health program will have on the size and distribution of the physician pool cannot be accurately assessed at this time. Therefore, decisions *limiting* physician supply should be approached with caution.

Economic consideration should also be given to the acceptance of USMSA into the clinical programs of U. S. medical schools. The USMSA finances his/her medical education through private sources and by Federally Insured Student Loans (FISL) made available by the Department of Health, Education and Welfare. Presently, there is pressure to restrict these loans to those students from foreign schools that have 95% of graduates passing the ECFMG examination. Because few schools obtain this pass rate, the 95% requisite will make this loan unobtainable by many USMSAs who are dependent on this source of funds to help finance their medical education. This represents a gross injustice to the U.S. citizen studying abroad and likely will be found unconstitutional. Moreover, the paradox of our federal government refusing to help finance the education of its own citizens through federally insured loans while indirectly supporting the education, through educational grants and contributions, of thousands of foreign students attending universities throughout the country, is difficult to reconcile. It is an anathema that, in a democracy, many qualified individuals are kept from achieving their career goals because of restrictive governmental and educational policies.

The first two basic science years of medical school education in the United States represent a significant expense that must be borne by the state and federal government through financial support to the majority of medical schools which are not financially autonomous. A large net savings can be realized by accepting *qualified* USMSA back into the United States due to the fact that participating medical schools would only be paying for the final two years of the student's education. The cost of educating a physician has been estimated to be $15,000 per year of medical school study[17] In 1976, the total number of FMGs practicing in the United States represented 21% of the physician pool, or approximately 85,000 physicians.[15] This represents a savings of approximately 1.2 billion dollars per year of education obtained abroad.

The current lack of a definite policy towards the USMSA is confusing to physicians, medical school admissions committees and most importantly to the

USMSA and their families. United States citizens studying medicine in foreign lands, as a whole, represent a group of highly motivated, dedicated individuals who desperately desire to re-enter the United States and obtain the education best suited to their individual career goals. This end is only possible with a definitive policy on the part of organized medicine and the federal government that embodies the best interest of U.S. medicine, the U.S. medical student abroad and the American people.

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Armchair Education:

Audiovisual Programs for CME Credit in the University of Arizona Health Sciences Center Library

A. Tschida Glassmeyer, R.N., M.A.,
Media Librarian

The AHSC Library's media collection, begun in 1973, presently has nearly 2000 titles. With few exceptions, the programs qualify for Category 5a credit of the AMA Physicians' Recognition Award and an ever increasing number qualify for Category I credit. The programs have been acquired from outside vendors and distributors as well as from among media programs produced by the Biomedical Communications Division of the University of Arizona. Although the audiovisual programs cover a broad range of basic science and clinical subjects, emphasis is on clinical medicine. Subject areas that are particularly strong are: cardiology, dermatology, emergency medicine, medical skills, neonatology, ophthalmology, otorhinolaryngology, pediatrics, physical examination techniques, and psychiatry.

In January, 1979, the University of Arizona Health Sciences Center Library published *Media Software Titles (Subject List)*, listing all media programs in the collection as of October 1, 1978. A year later, the first supplement to *Media Software Titles (Subject List)* was published. The publication format for the supplement is the same as that of the original listing; entries are arranged by broad subject categories which include titles, formats and accession numbers for the programs. The supplement lists 380 titles added from October 1, 1978 through the end of 1979.

The Library inaugurated its interlibrary loan policy for media materials in the summer of 1978. Since that time, all titles except those few with loan restrictions placed on them have been made available to health professionals and in particular to physicians in Arizona. The Library's procedure for obtaining media material through interlibrary loan has been kept simple. The health professional who wishes to borrow media programs need only contact the librarian of his/her hospital or health care facility. The librarian of the respective hospital or health care facility, in turn, will initiate the interlibrary loan request. Health professionals in isolated areas without access to a hospital or health care facility that provides library services may forward their requests directly to the Media Librarian, Arizona Health Sciences Center Library, University of Arizona, Tucson, Arizona 85724.

Media programs in the collection are in a variety of formats, e.g., 35 mm slides, audiocassettes, 3/4 inch videocassettes, and Technicolor Super 8 mm film loops (magnetic and optical sound). Many health care institutions in Arizona have the appropriate equipment for playback of the programs. Although the Library houses 35 mm slides in carousel trays, slides are removed from the trays for mailing. A hand viewer or any other type of slide projector may be used to view the **slide** format. **slide/sound** programs may also be viewed using any type of 35 mm slide projector in combination with an audiocassette playback unit, provided the audiocassette is recorded with audible tones to indicate when to advance the slides *or* if a narration script accompanies the program. A few **slide/sound** programs require a slide projector in combination with an audiocassette playback unit which has a synchronization mode because the audiocassette is recorded with inaudible tones and/or the program is without a narration script. All audiocassettes with audible or inaudible tones are pulsed at 1000Hz. Videocassettes are 3/4 inch and are not compatible with 1/2 inch home video recording/playback equipment.

Order forms for the *Media Software Titles (Subject List),Supplement I* have been sent to all health care institutions and hospitals in Arizona. There is no charge for receiving a copy of the supplement; however, copies will be sent only to those who complete the order form and return it to the Media Librarian, Arizona Health Sciences Center Library. Please consult with your librarian about *Media Software Titles (Subject List)* and the *Supplement I*, which list the media resources of the University of Arizona Health Sciences Center Library.

From: University of Arizona Health Sciences Center Library, Tucson, Arizóna 85724

State of the Art

Cardiac Death After Recovery From Myocardial Infarction

Jay W. Smith, M.D.

Editor:
Eric H. Prosnitz, M.D.

It has been estimated that 47,000 people die within the first year after recovering from acute myocardial infarction. This represents about ten percent of the patients with myocardial infarction;[1] thereafter, the death rate remains about three to four percent per year. Perhaps it will be possible to reduce this mortality rate during the first year after discharge since most of the patients who die during this period do not have progressive heart failure; rather their deaths are sudden and mostly unexpected. Can these patients who are at high risk be identified and can their risk be reduced?

The prognosis following myocardial infarction is related to the pumping function of the myocardium and its electrical stability, both of which are related to ischemia in patients with coronary artery disease. After myocardial infarction the prognosis is worse in patients with congestive heart failure,[2] and in patients with left ventricular ejection fractions less than 40 percent.[3] Patients with electrical instability manifested by ventricular premature beats (VPBs) also do worse.[3-5] Thus three factors—left ventricular function, ventricular arrhythmias, and myocardial ischemia,—which are undoubtedly interrelated, are the major determinants of risk after myocardial infarction.[6] Once the degree of risk contributed by each of the factors and the relationships between the factors are known, intervention trials can be designed attempting to reduce this risk.

There are numerous data showing that VPBs documented after initial recovery from myocardial infarction are associated with an increased risk of sudden death. Vismara el al[5] monitored patients for ten hours and reported that all patients who subsequently died suddenly had VPBs recorded on an ambulatory monitor before discharge from the hospital; there were no sudden deaths in patients without VPBs. Ruberman et al[2] showed that the presence of complex VPBs (R on T, runs of two or more, multiformed or bigeminal) detected in one hour of single-lead monitoring was associated with a risk of sudden death three times that of men free of complex VPBs. Ventricular premature beats detected on a standard 12-lead ECG during the first office visit following hospital discharge for myocardial infarction has also been associated with an increased mortality.[4] During a three year follow-up the mortality in men with VPBs was 21.4% compared to 11.2% in men with no VPBs; the mortality increased as the frequency of VPBs increased and was 40% in men with pairs or runs of VPBs.

In addition to ECG monitoring, exercise testing done just before patients with myocardial infarction are discharged has been used to detect VPBs. Erricson et al[7] found a mortality of ten percent at three months in patients with exercise induced VPBs and a mortality of 2.5% in patients with no VPB's during exercise. In addition, Granath et al[8] in following patients two to five years, found a 24% mortality in 171 patients without VPBs compared to 47% mortality in 34 patients with VPBs. However, Markiewicz et al[9] could not relate recurrent coronary events to exercise induced VPBs. Recurrent events developed in four of 19 patients with VPBs and in three of 23 without VPBs in a follow-up period of 18 months. In one study of unselected patients with coronary artery disease both continuous monitoring and exercise testing were done.[10] There were seven patients with ventricular tachycardia on exercise testing; only four of these seven had this detected on monitoring. These authors suggested that perhaps these two methods divulge different information regarding the pathophysiologic state of the myocardium and that perhaps the prognostic implications regarding sudden death are different.

Evidence of poor left ventricular function has been known for some time to portend a poor prognosis after myocardial infarction.[11] This appears true whether the poor function is manifest by clinical examination,[2] by low left ventricular ejection fractions,[3] or by exercise testing.[12] However, the questions of which of the two indicators (ventricular arrhythmias or poor ventricular function) is most important prognostically, and what is the relationship between the two are difficult to answer. Ruberman et al[2] showed that congestive heart failure after myocardial infarction increased the risk of sudden death, but the risk was even greater in patients with complex VPBs without conjestive heart failure. They concluded that complex VPBs contributed independently to the risk of sudden coronary death. Schultz et al[3] determined left venricular ejection fractions in 81 patients and monitored them for VPBs two weeks following myocardial infarction and found that eight patients with ejection fractions below 40%

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died, but these patients also had VPBs. They concluded that while a low left ventricular ejection fraction may suggest a poor prognosis, the presence of VPBs determines the risk of sudden death.

Ischemic ECG changes, detected on exercise testing, have also been reported to be an indicator of poor prognosis.[13] Markiewicz et al[9] found that ST segment depression was related to recurrent coronary events, and Theroux et al[14] reported a one year mortality of 2.1% in patients who had no ST segment change compared to 27% mortality in patients with ST segment depression. More recent data from the University of Arizona demonstrate that recurrent coronary events within one year occurred in 14.3% of patients with exercise induced ST segment depression and in 7.2% without ST segment depression, a difference that was not statistically significant.[15] A large multicenter post infarction program (MPIP Study) is now enrolling patients (in four medical centers throughout the country including three Tucson hospitals) who have survived myocardial infarction and is determining ventricular arrhythmias by continous monitoring, ventricular function by calculating radionuclide ejection fraction, and myocardial ischemia by exercise testing on all patients. The results of this study should determine the degree of risk associated with each factor and also provide clues as to how these factors interrelate.

After patients have been stratified according to risk it should be possible to design intervention trials to decrease risk. This risk stratification would be valuable because interventions which reduce risk would be much easier to demonstrate in patients of moderate to high risk and patients at low risk need not be subjected to the potential adverse effects of the intervention.[6] What are the results of intervention trials thus far?

A recent multicenter international study provided some evidence that prognosis following myocardial infarction might be improved with beta adrenergic blocking drugs.[16] The one year mortality following anterior myocardial infarction was reduced significantly; however, the drug, practolol, had to be withdrawn because of serious ocular, cutaneous and peritoneal reactions. Unfortunately, preliminary data using propronolal in patients with anterior mocardial infarctions did not show a beneficial effect at three months.[17] However, a large study using propronolal after myocardial infarction is now in progress.

Sulfinpyrazone, and established uricosuric agent, is known to inhibit platelet function and has been reported to decrease cardiac deaths from 10.3% to 5.0% during the first six months after myocardial infarction.[18] A reduction in sudden deaths from 7.0% to 1.8% was also demonstrated. Presumably, sulfinpyrazon prevents sudden death by controlling fatal; arrhythmias; the mechanism is not known. Similar studies using other antiplatelet drugs, aspirin and dipyridamole, are in progress.

What should the physician do to reduce mortality in the post infarction period? There is no right answer to this question. Many interventions—medical therapy including vasodilator, antianginal and antiarrhythmic drugs and surgical therapy—can be used to try to reduce myocardial ischemia, ventricular arrhythmias, and poor ventricular function, but none has been proven to prevent death. At the University of Arizona, patients have a 24-hour Holter monitor and/or submaximal exercise test prior to discharge. Those enrolled in the MPIP Study have both of these tests and a radionuclide ejection fraction determined. If a marked ischemic ECG change or a hypotensive response to exercise is induced, cornonary angiography is recommended to identify a surgically correctable high-risk lesion. If frequent VPBs or complex VPBs are identified, patients are given antiarrhythmic drugs which are continued for six months to one year. Further recommendations will change as patients of similar risk are entered into intervention trials and the data from these trials become available.

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Editorials

Vitamins, Do We Really Need Them?

We have all been besieged with advertisments both in the lay press as well as in our professional journals regarding the need to make certain our patients are receiving adequate doses of vitamins. Since this is an important area of public concern, I think it essential to reiterate what vitamins are, how we get them normally, and whether there is any basis for using exogenous vitamin therapy.

An important review of vitamins by Dr. Victor Herbert in the *Archives of Internal Medicine* (Vol. 140, page 173, 1980) prompts this editorial.

Basically, a vitamin is an organic chemical compound that is neither carbohydrate, fat nor protein. It is necessary for human metabolism, but is not made by the body itself in adequate amounts to sustain normality. Its lack produces a specific vitamin deficiency disease which when provided corrects that deficiency. There are 13 substances that are vitamins for humans, four of them being fat soluble (vitamins A, D, E and K), and nine water soluble (vitamins C and the eight B complex vitamins and folic acid). The last vitamin (B_{12}) was discovered in 1948 and since then no new vitamins have been found. There is thus no vitamin B_{15}. Some vitamins are made in the body, within bacteria, and are absorbed from the gastrointestinal tract. Others are made in the skin such as vitamin D. Still others are converted from other precursors such as niacin which is made from the amino acid tryptophan.

Most, if not all, of these vitamins are obtained eating a balanced diet such as that present in the United States. Thus, for most people, *supplemental vitamins are not needed.* Vitamins function in regulating specific metabolic activity usually by acting as co-enzymes. These chemicals are taken up by the cells that need them and combine with another protein already present to form a total enzyme package. Vitamins, therefore, have no useful metabolic function by themselves, and only function when combined with its other half which is made within the cell. The capacity of the cell to make its half of the enzyme is limited and thus the amount of vitamin needed to saturate the maximum quantity of partial enzyme that is made within the cell is roughly in the range of the recommended dietary allowance. Therefore, *vitamins in excess of this amount cannot serve a vitamin function* and therefore should be considered chemicals. It is similar to the concept of a hormone having a physiological versus pharmacological effect. We're all familiar with the effect of glucocorticoids and their significant side effects when used in larger than physiological replacement doses.

The side effects from large doses of vitamins (megadoses) can be minor to serious in nature. For instance, chronic ingestion of megadoses of vitamin A or D could result in death. Intravenous utilization of vitamin C has also caused the demise of a patient.

There are thus many false but popular misconceptions about vitamins, particularly among health food users. A good portion of the educated population of the United States is unaware that anyone in this country who eats a balanced diet can get enough vitamins in his regular food. A well-balanced diet means one that contains food from the "four food groups." These include grain, fruit, vegetable, meat and milk groups. Four portions of grain products, four portions of fruit and vegetables, two portions of meat products and two to three portions of milk products are necessary to accomplish this goal. Obviously other underlying medical conditions will alter the need for these basic food groups such as pregnancy, gastrointestinal absorptive difficulties or increased tissue requirements.

In summary then, vitamins are needed to act as co- or partial enzymes within cells. The necessary amounts of these vitamins can be gotten from eating a well-balanced diet. Megadoses or megavitamin therapy has not been shown to be of any value in the treatment of any condition. *Routine use of vitamin supplements for cold and/or cancer therapy or other bizarre uses to date have not been substantiated by scientific ally.*

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Auxiliary Highlights

It's been a good Auxiliary year. You know from reading this column how busy the county Auxiliaries have been. At the state level we've continued to emphasize leadership training, health education, public relations and our role as HSA observers.

Now, in April, our thoughts turn to the annual meeting of ArMA and its Auxiliary at The Pointe, Phoenix, April 23-27. Auxiliary activities actually begin on the 24th, with a Fun Run, another session of the popular Physicians' Families, an informal luncheon and an orientation meeting for members of the old and new boards.

AMA Auxiliary Vice President Isabel Dvorsky will be on hand early Thursday to participate in all our activities and we look forward to talking with AMA President Hoyt Gardner at the Steak Fry Thursday night.

At the Friday morning business session, we have to consider a substantial dues increase. It's necessary, if the Auxiliary is to grow into an innovative force and not be a mere conduit for information between the national headquarters and counties. Inflation is the major reason for the increase. We'll take a hard look at the proposed budget, consider alternatives.

I have encouraged the county auxiliaries to consider the possibility of establishing health education foundations so they could raise money to fund their own valuable projects and not have to rely on income from dues to finance them. State, too, is investigating sources of funding.

Friday noon, Joyce Newman will be installed as our new president and since it is the 50th year of the Auxiliary there will be a special program.

Friday night, Tucson's delight - Jazzberry Jam - will play for the President's Reception and Dinner Dance. Jeff Haskell and two other University of Arizona music school professors formed the six-man Jam so they could play the Dixieland Jazz and Chicago Swing they love. Should be a pleasant, relaxing evening as we honor our own distinguished doctors and have a chance to talk with friends.

We're excited about the special programs offered at this convention for doctors and their spouses:

Introduction to Media Workshops, planned to give us practice in speaking;

Economics for Women, taught Saturday morning by Stephen Happel, Ph.D., an associate professor of economics at ASU, and attorney Stephen S. Case;

Color Coordinating Your Life, a fun explanation of how you can choose the color right for you by Jeanne McDonald;

Teenage Sexuality panel; which should help us better understand our children.

There is a panel on exploring doctor-patient attitudes; and the one in which the AMA's noted attorney B. J. Anderson and ArMA's counsel, Bud Jacobson discuss the ever-increasing amount of litigation aimed at the medical profession.

We're especially grateful to Hospice supporters in Phoenix for bringing an internationally-known authority on the Hospice movement, William Lamers, Jr., M.D., to speak at the Sunday morning breakfast panel. Dr. Lamers is medical director of the Marin Hospice in Marin, California.

See you at The Pointe!

Mrs. John T. Clymer
ArMA Auxiliary President

Correspondence

Editor—

Re: "Improved Survival for Patients with Advanced Non-Small Cell Carcinoma of the Lung," *Arizona Medicine*, December 1979.

I read with interest the above article by Dr. Thomas Miller of the University of Arizona Health Sciences Center. I can appreciate the enthusiasm he has for treating advanced non-oat cell carcinoma of the lung with combination chemotherapy. However, the results thus far do not establish the efficacy of combination chemotherapy for the treatment of this disease.

It is entirely unfair to compare the current series with placebo-treated controls or untreated controls. As Dr. Miller well knows, any patient can receive a placebo or remain untreated, but not every patient can tolerate chemotherapy. Therefore, I am sure that his series is somewhat selected as compared to placebo-treated or untreated historical controls.

I would strongly suggest that before this therapy is recommended as standard treatment for advanced carcinoma of the lung that a prospective randomized control study be performed. Given the number of patients with lung cancer, I think this would be a fairly easy study to mount, and could be accomplished within a fairly short period of time. It would also alleviate doubts concerning the efficacy of such a protocol.

Edward E. Rogoff, M.D.

Editor—

Doctor Rogoff questions whether systemic chemotherapy is better than no treatment for advanced (metastatic) non-small carcinoma of the lung. Doctor Rogoff is particularly skeptical of trials which do not include concurrent untreated controls trial for comparison. He feels that a randomized, prospective, controlled trial of chemotherapy versus placebo treatment will safeguard against selecting healthier patients for chemotherapy and thereby favorably influence the outcome of the trial in favor of the chemotherapy-treated group. Doctor Rogoff is not alone in his views. In fact, some investigators in the past have felt that therapy for unresectable lung cancer is detrimental to patient survival when studied in a controlled clinical trial.[1] I disagree with that view, however, and would argue that adequate data is available to justify a trial of chemotherapy for patients with metastatic non-small cell carcinoma of the lung.

The question of whether controlled trials are a necessary prerequisite for accurate date analysis is a topic in itself and was recently debated in Tucson. In that debate Doctor Emil Freireich concluded his arguments by noting that "All knowledge is historical . . . science is based on using history to make predictions about the future and that is the sum of scientific knowledge."[2] In the case of metastatic carcinoma of the lung, past history has shown that the disease is uniformly and rapidly fatal. Treatments which prolong survival up to four times that documented by the vast experience with untreated patients are not difficult to interpret.

Frequently, there is a suspicion that uncontrolled series are selected to favor patients with a good prognosis. In an effort to minimize that effect, current trials routinely report the performance status and other important prognostic factors of the patients so that accurate comparisons can more easily be made. For patients with lung cancer, the fact that metastases are present is an overwhelming poor prognostic determinant. It is difficult to select good prognosis patients from within this group. Commonly, only patients who have rapidly progressive disease and are desperate for therapy are referred to cancer centers for chemotherapy. Thus, I would argue that our series is heavily weighted for poor prognostic factors compared to untreated control groups.

Finally, I do not agree with Doctor Rogoff's contention that every patient can receive a placebo, but not every patient can tolerate chemotherapy. In our series of 56 patients treated over the past 24 months, only one patient stopped therapy because of side effects. On the other, ten of 56 patients have survived for more than one year since beginning therapy. One patient is alive without evidence of cancer, and off chemotherapy for 104 weeks. These patients have benefited from chemotherapy. Furthermore, if these same patients had been treated with placebo, a very conservative estimate (based on the experience of thousands of previously placebo-treated patients) is that seven of the ten would have died within the first year.

I suggest that a very conservative approach to patients with non-small cell carcinoma of the lung is to adminster one or two courses of chemotherapy to identify the forty percent of patients who can tolerate and benefit from chemotherapy. To offer a placebo or non-treatment to these patients in the guise of a randomized clinical trial, is to offer conclusively proven ineffective therapy and its associated fifty percent chance of death within three months.

Thomas P. Miller, M.D.

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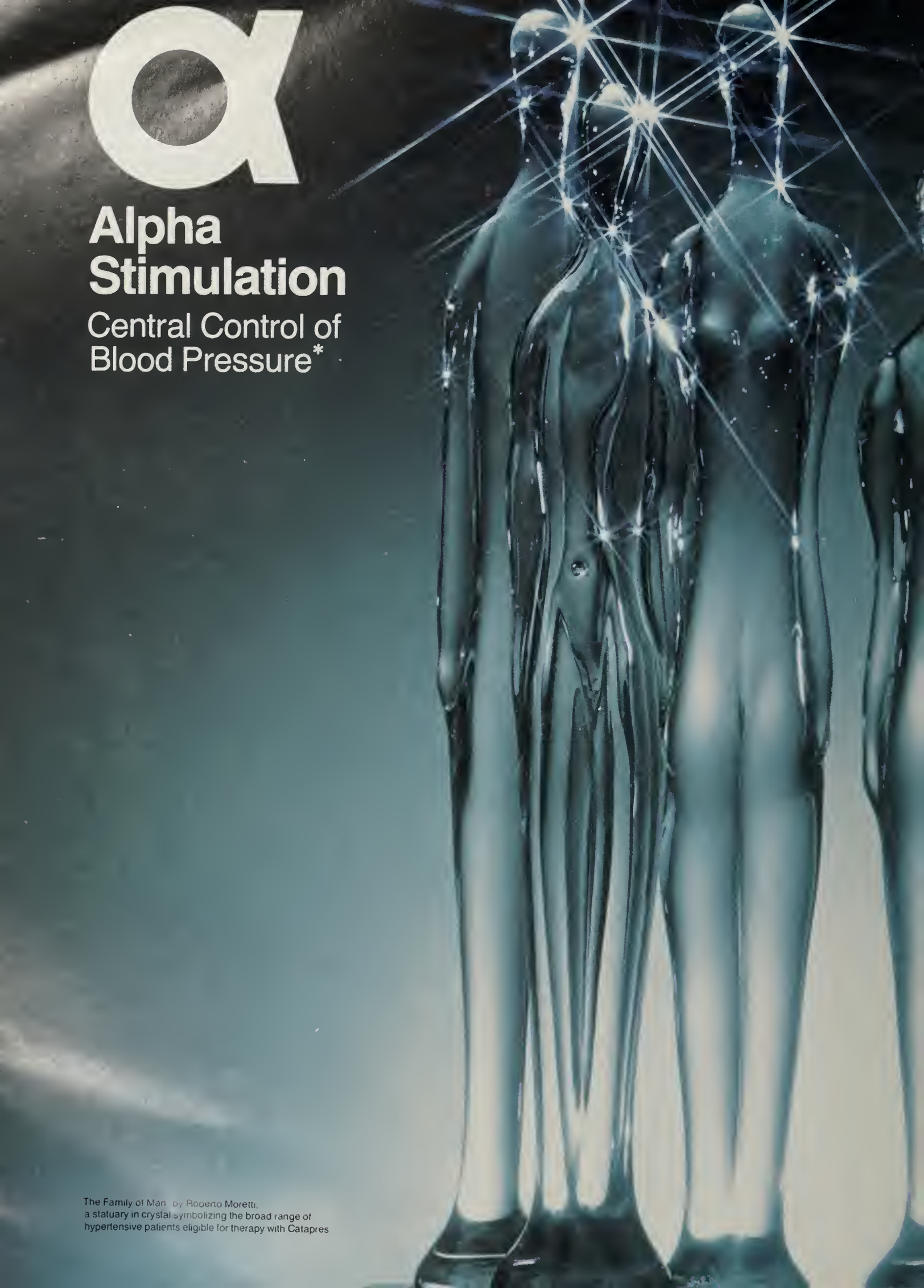
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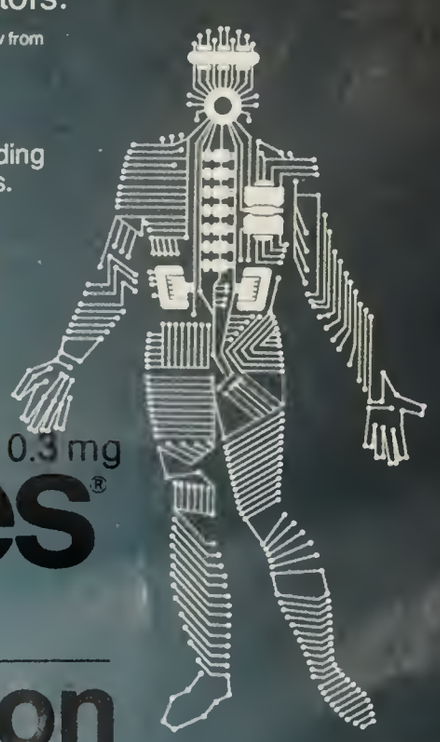
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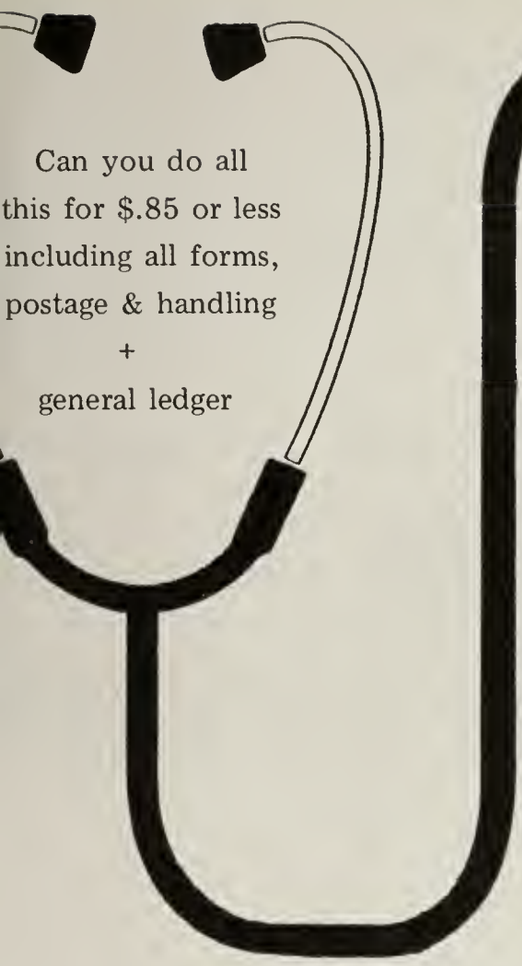
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Medical History

The Case of the Skunk Boat

Dry Gulch Jake

Some years ago we noted in these aberrant notes, that in early times the cowpokes here about carried skunk boats.

This was questioned by some local historians. Albeit our informant was for many years associated with the Phoenix Tent and Awning Company and had taken orders for and made these desert boats for the locals.

To my surprise and delight Dr. Ralph F. Palmer, 1875-1954, Arizona License No. 53, dated June 23rd, 1903 gave a delightful account of a camping trip with his wife from Camp Verde circa 1903.

They had reached Fossil Creek about dark the first day out on horseback and his account continues "We laid out our canvas tarp and put our bedroll on it, thinking to have a good sleep".[1] "This was the time of year that grub beetles came out of the ground, climbed the sycamore trees, clenched their claws into the bark and the back splits open letting the matured beetle come out. Shortly thereafter the wings are developed and the beetles take flight. The noise of the beetles becomes terrific when several hundred are buzzing around, and sleep was impossible.

"After an hour or so of this, Mame (his wife) was also dubious about a rattlesnake getting in bed with us or that possibly one of the little black hydrophobias skunks might come along and bite our noses. I never saw one of these skunks, but had heard plenty of stories about them. At any rate she insisted and I had to get up and get a fire going for light and rig up our 'skunk boat.'

"The skunk boat which they had fixed up at the store and advised us to take along was a 24 foot strip of muslin, 36 inches wide, sewed together at the ends. It also had loops at the corners through which stakes were driven into the ground, making a pen about six feet long, four feet wide with sidewalls about two feet high. The bottom edge was staked to the ground and the canvas and the bedroll covered the edges, as the walls slanted in, neither a snake nor a small skunk could, theoretically, climb over it or get under it.

"I never heard of one trying to, but I have seen rattlesnakes go over higher obstacles and I imagine an agile skunk could hop over it; but, at any rate, the psychology was good and we finally got used to the beetles, we had some sleep."[1]

So much for skunk boats, please note also that he refers to hydrophobia skunks. Dr. Yount of Prescott, soon put the record straight on that and wrote an article which informed his fellow practitioners that hydrophobia skunks were not a separate species, as indeed the Department of Agriculture suggested, but were simply rabid skunks and that the Pasteur Treatment was the only possible means of warding off the disease. Trappers, hunters and cowhands who frequently slept in the open, were frequent victims all through the Southwest at the turn of the century.

To return to Dr. Palmer and his early experiences, *Doctor on Horseback* has recently been published by his daughter, Harriett Palmer McArder in association with the Mesa Historical and Archeological Society. His experiences in Territorial Arizona are sometimes hilarious and always informative.

Reference

1. Palmer, RF: Doctor on Horseback, Mesa Historical and Archeological Society, Mesa, Arizona, p. 60-61, 1979.

ArMA Reports

The minutes appearing in this section have been edited to conserve space. A complete copy of the minutes of any meeting will be mailed to any member requesting them.

Finance Committee

The meeting of the Finance Committee of the Arizona Medical Association, held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, February 9, 1980, convened at 10:19 a.m. Neopito L. Robles, M.D., Treasurer and Chairman, presiding.

1981 Budget

The committee did a zero-based budget review of all income and expense accounts for the 1981 budget as well as the reconciliation of the budget and cash flow requirements.

It was moved and carried to recommend to the Board of Directors the approval of the 1981 budget which reflects a dues increase of $50.00.

Arizona Medical Association
1981 Budget Work Sheets
As prepared and approved by the Finance Committee on 2/9/80

Condensed Statement of Revenues and Expenditures

General Department		
	Revenue	$ 821,915.00
	Expenditures	717,005.00
		$ 104,910.00
Committee Department		
	Revenue	$ 13,500.00
	Expenditures	69,000.00
		$ (55,500.00)
Annual Meeting		
	Revenue	$ 59,200.00
	Expenditures	55,590.00
		$3,610.00
Publishing Committee		
	Revenue	$ 99,350.00
	Expenditures	97,660.00
		$ 1,690.00
Total Operations		
	Revenue	$ 993,965.00
	Expenditures	939,255.00
		$ 54,710.00

General Department		
Revenue		
401	AMA Commissions	$ 3,000.00
403	Dues-Active Members	665,000.00
404	Dues-Interns/Residents	30.00
406	Dues-Service Members	935.00
420	Printing Income	86,000.00
421	Sale of Supplies	700.00
429	Administrative Income	12,000.00
471-3	Building Assessment	29,250.00
474-5	Rental Income	25,000.00
	Total Revenue	$ 821,915.00
Expenditures		
501	Auditing	$ 5,300.00
504	Dues, Subscrips., Contr.	3,000.00
505	Equipment Maint. & Rent	9,000.00
507	General O/H (recovery)	(6,800.00)
508	Insurance, General	47,000.00
509	Insurance, Health	11,700.00
510	Legal	31,000.00
511	Meeting	39,000.00
512	Miscellaneous	3,300.00
513	Payroll Taxes	18,480.00
514	Postage	10,000.00
515	Printing	5,400.00
516	Refunds - ArMA Commission	10,125.00
518	Salaries	308,000.00
519	Supplies	15,000.00
520	Telephone	12,000.00

521	Travel	28,000.00
522	President's Expense	10,000.00
524	Interest Expense	1,700.00
530	Printing Dept. Expense	84,000.00
571	Depreciation Expense	23,000.00
572	Building Maintenance	8,000.00
574	Building Supplies	3,300.00
576	Property Taxes	5,500.00
577	Utilities	28,000.00
578	Building Insurance	4,000.00
	Total Expenditures	$ 717,005.00

Committee Deparment
Revenue

431	CME Processing Fee	$ 1,500.00
432	MICC Assessment	- 0 -
481	Benevolent & Loan (Interest)	12,000.00
	Total Revenue	$ 13,500.00

Expenditures

500A	Articles of Inc. & Bylaws	
500B	Benevolent & Loan	
500D	Board of Directors	
500E	Executive	
500F	Finance	
500H	Grievance	*(Detailed Amounts to*
500I	History & Obituaries	
500J	Maternal & Child Health	*Be Determined After*
500K	Health Manpower	
500L	Legislative	*Chairpersons are*
500M	Medical Education	
500N	Medical Economics	*Appointed in*
500O	Occupational Health	
500Q	Professional	*April, 1980)*
500R	Public Relations	
500S	Governmental Services	
500U	House Staff	
500W	ArMA Auxiliary	
500X	Physicians Rehabilitation	
500Z	MICC	
	Total Expenditures	$ 69,000.00

Annual Meeting Department
Revenue

441	Exhibit Booth Rental	$ 22,000.00
442	Sponsorship, speakers	- 0 -
443	Steak Fry	5,000.00
444	President's Banquet	5,000.00
445	Breakfast Panel #1	600.00
446	Breakfast Panel #2	600.00
447	Registration Fees	26,000.00
449	Other	- 0 -
	Total Revenue	$ 59,200.00

Expenditures

541	Exhibit booth expense	$ 3,700.00
542	Guest speaker expense	5,000.00
543	Steak Fry	6,400.00
544	President's Banquet	6,000.00
545	Breakfast Panel #1	600.00
546	Breakfast Panel #2	600.00
547	Audio-visual equipment	3,500.00
548	Delegate's Manual	4,000.00
549	Employee Hotel	3,000.00
550	Gratuities, hotel emp.	250.00
551	Miscellaneous	4,900.00
552	Newcomer Program	50.00
553	Nominating Committee	40.00
554	Postage	- 0 -
555	Printing	4,500.00
556	Promotion	5,700.00
557	Public Relations	4,500.00
558	Scientific Assembly Committee	1,000.00
559	Supplies	1,200.00
560	Travel	50.00
561	Telephone	600.00
	Total Expenditures	$ 55,590.00

Publishing Committee

Revenue

461	Advertising	$ 46,000.00
462	Reprints	3,200.00
463	Subscriptions, member	47,900.00
464	Subscriptions, nonmember	2,200.00
465	Other	50.00
	Total Revenue	$ 99,350.00

Expenditures

504	Dues and Subscriptions	$ 150.00
505	Equipment maintenance	13,000.00
506	General Overhead	4,400.00
509	Insurance, health	475.00
511	Meeting	50.00
512	Miscellaneous	50.00
513	Payroll Taxes	875.00
514	Postage	1,560.00
515	Printing	60,000.00
518	Salaries	14,500.00
519	Supplies	2,100.00
521	Travel	500.00
	Total Expenditures	$ 97,660.00

Scholarships

In 1964, the House of Delegates adopted Resolution #14, which designated that all interest earned on Association investments be used for a student scholarship program. It was the feeling of the committee that this is too restrictive.

It was moved and carried to recommend to the Board of Directors that it consider repeal of the House of Delegates' resolution which limits the use of earned interest to scholarship grants.

Committee Budgets

It was moved and carried to continue the current program of setting a gross figure for all committees for the purpose of House of Delegates' action, to be followed later in the year, after new chairmen are appointed, by a process whereby the committee chairmen participate in setting the detailed budget.

It was moved and carried to recommend to the Board of Directors that all committee chairmen be asked to appear before the Finance Committee in September or October for the purpose of justifying their budget requests.

Dues Structure

Consideration was given to a form of dues structure other than the present one, and

It was moved and carried to recommend to the Board of Directors that consideration be given to apportioning the individual's ArMA dues relative to the member's average mean income, i.e., the MICA insurance class rating.

Executive Committee

The meeting of the Executive Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, February 15, 1980, a quorum being present, convened at 6:41 p.m., William E. Crisp, M.D., President and Chairman, presiding.

Board of Medical Examiners

Letter dated 2/6/80 from BOMEX regarding vacating space of office space on 4/5/80. *Received.*

Arizona Hospital Association Certificate of Need

The committee was advised that during a recent meeting of the ArHA Board of Directors a great deal of concern was expressed regarding Certificates of Need and apparent conflicts of physicians/hospitals relating thereto. Following a lengthy discussion,

It was moved and carried that the Arizona Medical Association reaffirm its position regarding Certificates of Need and offer its assistance and help to the Arizona Hospital Association in its endeavor to find a way to deal with the apparent conclicts existing regarding Certificates of Need.

Continuing Medical Education Requirements

Board of Directors' letter dated 1/14/80 setting forth its action of 1/5/80 relative to ArMA/BOMEX CME requirements. *Received.*

Letter dated 1/30/80 from Robert E. T. Stark, M.D., setting forth his position as Chairman of the Medical Education Committee. *Received.*

The Committee reviewed both of the above-mentioned documents and, following discussion,

It was moved and carried to refer the letter dated January 14, 1980 from the Board of Directors, together with the letter dated January 30, 1980 from Robert E. T. Stark, M.D., to the Medical Education Committee for consideration by the Committee as a whole and, following consideration, that Committee submit to the Board of Directors its recommendations regarding ArMA/BOMEX CME requirements

Border States Health Research Synthesis and Dissemination Project

The Committee, once again, reviewed the technical proposal for the Border States Health Research Synthesis and Dissemination Project together with the letter dated 1/30/80 from Louis C. Kossuth, M.D., concerning his review of that proposal, and it was the consensus that the information contained in the proposal was vague and confusing and that request should be made for further clarification so that the Committee might be fully informed as to the objectives of the project.

Housestaff Physicians' Association

The Committee considered a request dated 1/23/80 from the HouseStaff Physicians' Association for financial support of a housestaff orientation.

It was moved and carried that the Arizona Medical Association, other than the funds presently allocated for its HouseStaff Committee Activities, does not have sufficient funds within its budget to offer any financial assistance to the HouseStaff Physicians' Association as requested by letter dated January 23, 1980.

Legislative Activites

Gary Barnett briefly reported on the status of legislative activities and stated that, while the session was getting off to a slow start, many health bills were being presented this year and that most of the bills in which the Association is actively interested have been introduced.

Western Physicians Purchasing Association

Bruce Robinson reported to the Committee relative to the current status of the WPPA, advising that all but three states have now withdrawn from participation, that all of the business records of the WPPA had been moved to Flagstaff, where Dr. Kahle, as President of WPPA, was continuing to conduct the business of organization. A lenghty discussion was held regarding all of these matters as well as the existing and potential lawsuits which might result by way of the withdrawal of the various states and

It was moved and carried that Counsel for the Association be requested to notify John F. Kahle, M.D., as President of the Western Physicians Purchasing Association that the Association, by and through its Executive Committee, is presently considering the advisability of continuing its involvement in the WPPA, and that, until final determination is made in this regard, Dr. Kahle should conduct business only as President of WPPA and not as agent for or on behalf of ArMA.

It was moved and carried that Edward Jaconson, Esq., as counsel for, and Bruce E. Robinson, as Executive Director of, The Assoaition review all documents relating to the incorporation of The Western Physicians Purchasing Association and, in an effort to minimize responsibility and liability of the Association as much as possible, recommendations be made to the Executive Committee regarding actions which might be taken by the Association concerning participation in WPPA.

Other Business

Arizona Health Service Corps

Mr. Robinson advised the committee regarding a recent HEW audit which had been performed and on which preliminary recommendations had been received. He advised that the committee would, of course, be appraised of the final determinations made by HEW.

Nominating Committee

The meeting of the Nominating Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, February 16, 1980, convened at 10:25 a.m., Richard L. Dexter, M.D., Chairman, presiding.

Nominations 1980 Annual Meeting

It was moved and carried to submit the following nominations to the House of Delegates at its 1980 Annual Meeting:

President-Elect (1980-81)
Clyde W. Kurtz, M.D.
Richard D. Zonis, M.D.
Vice-President (1980-81)
John E. Oakley, M.D.
Richard W. Griesenbeck, M.D.
Secretary (1980-81)
Earl J. Baker, M.D.
Wilfred M. Potter, MD.
Treasurer (1980-81)
Neopito L. Robles, M.D.
Thomas M. Foreman, M.D.
Speaker of the House (1980-81)
Robert A. Price, M.D.
Marshall B. Block, M.D.
Editor-in-Chief (1980-81)
Marshall B. Block, MD.
Robert A. Price, MD
Delegate to the AMA (1/1/81-12/31/82)
William C. Scott, M.D.
Ronald P. Spark, M.D.
Alternate Delegate to AMA (1/1/81-12/31/82)
Joseph S. Whaley, M.D.
Eugene P. Falk, M.D.
Central District Director (1980-83) (Maricopa)
Richard L. Collins, M.D.
Robert B. Armstrong, M.D.
Central District Director (1980-83) (Maricopa)
Howard S. Gray, M.D.
Benjamin K. Harris, M.D.
Central District Director (1980-83) (Maricopa)
Rudolf Kirschner, M.D.
Peter T. H. Mao, M.D.
Southeastern District Director (1980-83) (Cochise, Graham, Greenlee, Santa Cruz)
Kenneth A. Dregseth, M.D.
Paul T. Lenio, M.D.
Southern District Director (1980-83) (Pima)
Christopher T. Maloney, M.D.
Morris H. Fine, M.D.
Southern District Director (1980-83) (Pima)
Morton Fuchs, M.D.
Robert S. Hirsch, M.D.
Southwestern District Director (1980-83) (Pima, Yuma)
James F. Martin, M.D.
Douglas E. Parkin, M.D.

Medical Economics Committee

Meeting of the Medical Economics Committee of the Arizona Medical Association held Thursday, February 22, 1980, at 810 West Bethany Home Road, Phoenix, convened at 6:52 p.m., Clyde W. Kurtz, M.D., Chairman, presiding.

Mental Health Insurance Coverage

The Committee received from the Board of Directors recommendation of the Physician Rehabilitation Committee regarding adoption by the Association of a position relative to mental health insurance coverage. The recommendation, specifically, is that all insurance programs sponsored by ArMA be non-discriminatory regarding the treatment of alcoholism, substance abuse and mental illness in terms of benefits available to policy holders and that deductibles charged for treatment of these disorders should be no greated than those charged for other medical conditions. There was considerable discussion. Not action was taken.

Proposal for Association Sponsored Major Medical Program

Mr. Russell Waters, Southern California Agency, National Casualty Company, presented proposal for an Association sponsored major medical program. The program has been proposed by the Washington National Insurance Company to provide coverage for members, dependents and member's employees of the Arizona Medical Association. The insurance

program would be administered through Health Agencies of the West, the company which currently administers all of the Association's insurance programs. There was considerable discussion. Motion was made to accept the proposal to be offered to members of ArMA; the motion failed. Mr. Waters will be requested to secure additional proposals and comparative figures for consideration by the Committee.

Adoption of 1974 CRVS By The Industrial Commission of Arizona

The Committee discussed the advantages and disadvantages of recommending to the Industrial Commission of Arizona a change from the currently used 1964 CRVS to the 1974 CRVS. There was considerable discussion.

It was moved and carried to recommend to the Board of Directors that the Arizona Medical Association encourage the Industrial Commission of Arizona to establish its fee schedule utilizing the 1974 CRVS. Further, however, ArMA would encourage the Industrial Commission of Arizona to continue using the Relative Value Studies provided by the American Society of Anesthesiologists and the American College of Radiology for their respective fees.

Preparation for Meeting with the ICA to Establish Medical Fee Schedule

The Committee discussed the Association's presentation to the Industrial Commission of Arizona on the medical fee schedule. The Committee received information indicating that usual and customary billed charge statistics are available from Medicare and when adjusted to include increases in the Consumers Price Index could provide a reasonable data base from which the ICA could establish its medical fee schedulae. There was considerable discussion.

It was moved and carried to recommend to the Board of Directors that the Industrial Commission of Arizona be encouraged by the Arizona Medical Association to accept the usual and customary billed charge statistics available from Medicare, adjusted for increases in the Consumers Price Index, as the data base for establishing their Medical Fee Schedule.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

- Arizona Chapter, American Cancer Society
- Arizona Heart Institute
- Arizona Medical Association
- Arizona State Hospital, Phoenix
- Camelback Hospital, Phoenix
- Desert Samaritan Hospital, Mesa
- Good Samaritan Hospital, Phoenix
- Health Maintenance Associates, Phoenix
- Maricopa County General Hospital, Phoenix
- Memorial Hospital of Phoenix
- Mesa Lutheran Hospital, Mesa
- Phoenix Baptist Hospital & Health Center
- Phoenix Indian Medical Center
- Phoenix Psychiatric Council
- St. Joseph's Hospital & Medical Center, Phoenix
- St. Lukes's Hospital & Medical Center, Phoenix
- St.Mary's Hospital, Tucson
- Scottsdale Memorial Hospital
- Tucson Hospitals Medical Education Program, (THMEP) Tucson
- University of Arizona College of Medicine, Tucson
- Veterans Administration Medical Center, Phoenix
- Veterans Administration Hospital, Prescott

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

APRIL

Management of Arrhythmias: Use & Abuse of Anti-arrhythmic Drugs
April 15, Desert Samaritan Hospital, Cafeteria-West End, Sponsor: Desert Samaritan Hospital. Contact: Office of GME Desert Samaritan Hospital, 1400 S. Dobson rd., Mesa AZ 85006. Approved for CME credit.

Vectrocardiography Basic Workshop
April 16-18, Hilton Hotel, Scottsdale, Arizona. Sponsor: Good Samaritan Hospital & American College of Cardiology. Contact: Good Samaritan Hospital, CME office, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 16 hours of category 1 credit.

5th Annual Update Primary Care
April 16-19, Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 25 hours of category 1 credit.

Chronic Obstructive Pulmonary Disease
April 17, Williams Air Force Base, Hospital Conf. Rm., Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon's Office. Approved for 1 hour of category 1 credit.

Craniovertebral Radiology
April 18, Phoenix Country Club, Phoenix, AZ, Sponsor: ArMA and Phoenix, Radiology Society. Contact: Arizona Medical Assoc., 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 1½ hours of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
April 18-19, Arizona Medical Association, 810 W. Bethany Home Road, Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate-American Heart Assn. & ArMA. Contact: Carol Turner, Arizona Medical Assn. Approved for 16 hours of category 1 credit.

Infectious Diseases for the Practicing Physicians
April 19, Good Samaritan Hospital, Education Bldg., Phoenix, Arizona. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 7 hours of category 1 credit.

10th Annual Meeting of the Univ. Assn. of Emergency Medicine
April 21-23, Doubletree Inn, Tucson, AZ, Sponsor: American College of Emergency Physicians. Approved for 20 hours of category 1 credit.

Ischemic Heart Disease
April 23, Maryvale Samaritan Hospital, Maryvale, AZ. Sponsor: Good Samaritan Hospital Contact: Good Samaritan Hospital office of CME, 1033 E. McDowell Road, Phoenix, 85006. Approved for 1½ hours of category 1 credit.

1980 3rd Annual Arizona Emergency Medicine Symposium
April 23-25, Safari Resort, Scottsdale, AZ. Sponsors: ACEP & Arizona Emergency Medical Systems, Inc. Contact: Jennie Johnston, Symposium Coordinator, AEMS, 301 W. Osborn Rd., Ste 112, Phoenix, AZ 85013. Approved for 18 hours of category 1 credit.

Arizona Medical Association 89th Annual Meeting
April 23-27. The Pointe Resort, Phoenix, AZ. Sponsor: The Arizona Medical Association, Inc. Contact: Bruce E. Robinson, Executive Dir., ArMA, 810 W. Bethany Home Road, Phoenix, AZ 85013. Approved for category 1 credit.

Real Time Ultrasound
April 25-27, Doubletree Inn, Scottsdale AZ. Sponsor: Good Samaritan Hosptial. Contact: Office of CME, Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 10 hours of category 1 credit.

MAY

Acne
May 1, Wiliams Air Force Base, Hospital Conf. Rm., Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon's Office. Approved for 1 hour of category 1 credit.

The Pursuit of Wellness
May 2-4, 1980. University of California, San Francisco. Sponsor: Univ. of California, San Francisco, Health Promotion Office of the State Dept. of Mental Health, Institute of Noetic Sciences. Contact: Univ. of California, Continuing Education Health Sciences, 1308 3rd Ave., San Francisco, CA 94143. CME credit available.

An Overview of Medical & Surgical Management of Rheumatoid Arthritis
Desert Samaritan Hospital, Mesa Arizona. Sponsor Desert Samaritan Hospital. Contact: Office of CME Desert Samaritan Hospital, 1400 South Dobson Road, Mesa, AZ. Approved for CME credit.

Valvular Heart Disease
May 1, Maryvale Samaritan Hospital, Sponsor: Good Samaritan Hospital. Contact: Office of CME Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 85006. Approved for 1½ hours of category 1 credit.

Diagnosis and Management of Arthritis
May 15, Williams Air Force Base. Sponsor: USAF Manpower & Personnel Center. Contact: Surgeon's Office, Williams Air Force Base, Mesa, AZ. Approved for 1 hour of category 1 credit.

The Physiologic Basis for Interpretation of Chest Radiology
May 15, Phoenix Country Club, Phoenix, Arizona. Sponsor: Phoenix Radiology Society. Contact: Alex Newman, M.D., MCGH, 2610 E. Roosevelt, Phoenix, AZ. Approved for 1½ hours of category 1 credit.

Male Sexuality - Current Issues
May 24, Memorial Hospital, Phoenix, AZ. Sponsor: Memorial Hospital, Contact: Office of CME Memorial Hospital of Phoenix, 1201 S. 7th St., Phoenix, AZ 85036. Approved for 3 hours of category 1 credit.

Cardiomyopathies
May 28, Maryvale Samaritan Hospital. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Sam, 1033 E. McDowell Road, Pheonix, AZ 85006. approved for 1½ hours of category 1 credit.

ACP Course, MKSAP Session III
May 30-31, Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 12 hours of category 1 credit.

JUNE

Interim Scientific Meeting
June 7-8, Pinetop Lakes Resort, Pinetop, AZ, Sponsor: American Academy of Family Physicians. Contact: Lee Mahoney, 8534 E. Amelia, Scottsdale, AZ 85251. Approved for 9 hours of category 1 credit.

Hypertension
June 11, Maryvale Samaritan Hospital. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital 1033 E. McDowell Rd., Phoenix, AZ 85006. approved for 1½ hours of category credit.

Arizona Perinatal Medicine Program
May 13-14, Prescott, Arizona, Sponsor: Arizona Perinatal Program and ArMA. Contact: Arizona Perinatal Program, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 15 hours of category 1 credit.

Summer Pediatric Conference
May 13-15, Poco Diablo, Sedona, AZ. Sponsor: U of A College of Medicine & Arizona Pediatric Society. Contact: Office of CME UHSC, Tucson, AZ 85724. Approved for 14 hours of category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.
Clinical Conference Cardiovascular Medicine
Third Tues.,5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.
Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.
Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists
Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.

Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucosn, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.

Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.

Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm

Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.

Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.

Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.

Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North

Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.

Pediatric Grand Rounds
3rd. Tuesday, 7:30-8:30 A.M., Contact: Paul Bergeson, M.D.

Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.

Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.

Dr. Finger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.

Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.

OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.

PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.

Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.

GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.

Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora

Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.

Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology

Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.

Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.

Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.

Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.

Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.

PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL,(THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.

Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman

Ophthalmology Conference
1st Monday, 12:30 P.M., Contact: Bruce Gillers, M.D.

Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.

Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.

Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.

Clinical Pharmacology Conference
5th Tuesday, 12:30 P.M., Contact: M. Katz, Clinical Pharm.

12Neurology Conference
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.

Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.

Medical Surgical Grand Rounds
2nd Wed., 12:30 P.M., Contact: Chief Medical Resident

Medical Conference
1st Wed, 12:30 P.M., Contact: Chief Medical Resident

Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.

Endocrine Conference
2nd Thursday, 12:30 P.M., Contact E. Munjack, M.D.

GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.

Mortality & Morbidity Conference
3rd. Thursday, 12:30 P.M., Contact: E. Munjack, M.D.

OB/GYN Dept. Meeting
2nd Thursday, 2 P.M., Contact J. Wurzel, M.D.

OB/GYN Pathology Conference
Weekly,Thursday, except 2nd, Contact: J Wurzel, M.D.

OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel M.D.

Clinical Pathology
5th Thursday, 12:30 P.M., Contact: J. Fleishman, M.D.

Renal Conference
1st Friday, 12:30 P.M., Contact: T. Pence, M.D.

Hematology Conference
2nd & 4th Friday, Contact: S. Ketchel, M.D.

Rheumatology Conference
3rd Friday, 12:30 P.M., Cntact J. Goldberger, M.D.

Chest Conference
5th Friday, 12:30 P.M., Contct: D. Engelsberg, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.

Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.

Hepatology Conference
2nd Tuesday, 1:00 P.M., Contact: Walt Koppenbrink, M.D.

OB/GYN Dept. Grand Rounds
Weekly Tuesday, 12 Noon, Santa Cruz Room

Obstetrical Problem Conference
Weekly Tuesday, 7:15 A.M., Yavapai Rm.

Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.

Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.,Contact: Robert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42

Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.

Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.

OB/Neonatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.

Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.

Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.

Cardiology Conference
Weekly Thurs., 2 P.M., Santa Cruz Rm.

OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.

GYN Endocrine Seminar
1st & 3rd Friday, 12:30 P.M., Sanata Cruz Rm.

OB/GYN Surgical Pathology Conf.
Weekly Friday, 7 A.M., Yavapai Rm.

Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.

Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon

OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.

Clinical Staff Teaching Conference, Rm. A.
Wed. Weekly, 8:00 A.M.

Family Practice/Emergency Room Teaching Conference
Thursday Weekly, 7:30-8:30 A.M., Conf. Rm. A, Contact: Drs. L. Moher & L. Fairbanks.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.

Tumor Board Conference
Weekly Friday, 12 P.M., Kiva Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for category 1 credit.

Family Practice Conference
1st Monday, 12:30 P.M., Doctors' Lounge

Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge

Neurology & Neurosurgery Conference
3rd Monday, 12:30 P.M., Doctors' Lounge

Internal Medicine-Clinical Pathological Conference
4th Monday, 12:30 P.M., Doctors' Lounge

Pulmonary Medicine Conference
1st Tuesday, 12:30 P.M., Doctors' Lounge

Cardiology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge

Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge

Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge

Cardiolpulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge

OB/GYN Dept. Meeting & Conf.
2nd Wed., 12:30 P.M., Doctors' Lounge

Trauma Conference
3rd Thurs, 12:30 P.M., Doctors' Lounge

Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge

Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge

GI Medical—Surgical Rdiological Conf.
2nd Friday, 12:30 P.M., Doctors' Lounge

Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly Monday, 12:15 P.M., Auditorium

Surgery Conference
1st Tuesday, 12:15 P.M., Auditorium

Emergency Medicine Conference
1st Wednesday, 12:15 P.M., Auditorium

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 P.M., Auditorium

Psychiatry Conference
3rd Thursday, 7 A.M., Auditorium

Combined Medical-General Practice Conference
1st Friday, 12:15 P.M., Auditorium

Toxicology Grand Rounds, Auditorium
1st Friday, 7:30 A.M., Auditorium

Ophthalmology Conference
1st Saturday, 8:30 A.M., Auditorium.

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 P.M., 1st Floor Conf. Rm.

Genetics Conference
Weekly Monday, 12:30 P.M., Pediatric Department

Pediatric Rounds
Weekly Monday, Wed., & Friday, 10:30 A.M., Pediatric Department

Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 A.M., Contact: J. Kipp Charlton, M.D.

ECG. Conference
Weekly Tuesday, 12:30 P.M., Pediatric Department

Medical Grand Rounds
Weekly Wednesday, 8 A.M., 1st Floor Conf. Room

Visiting Professor Formal Presentation
Weekly Thursday, 8 A.M., PIMC

Visiting Professor Informal Rounds
Weekly Thursday, 9:30 A.M., 1st Floor Conf. Room

Visiting Professor Formal Presentation
Weekly Thursday, 12:30 P.M., PIMC.

Nephrology Conference
Weekly Friday, 12:30 P.M., Pediatric Department

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
3rd Tuesday, 12 P.M., Contact Wm. Moteforte

Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 P.M., Contact: Kim Sowards.

Current Concepts in Medicine
Weekly Tuesday, 12 P.M., Auditorium.

Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 P.M., Contact: S. Salmon, M.D.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday

Emergency Medicine Lectures
Weekly Thursday, 8 A.M., Century Room A

Mental Health Update
1st Friday, 11:30-1:00 P.M., Century Room A

Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly Monday, except last, 12 Noon, Contact: J. Fernadez, M.D.

Dermatology Conference
4th Monday, 5:15 P.M., Contact: R. Friedman, M.D.

Endocrinology Conference
Last Monday, 12 P.M., Contact M. Parker, M.D. **Perinatal Conference**
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.

Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.

Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact: L. Mann, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.

Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.

Family Practice Meeting
2nd Wednesday, 12:30 P.M., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.

Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.

Gynecologic-Oncology Disposition Conf.
Weekly, Thursday, 8:30 A.M., Contact: E. A. Surwit, M.D.

Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.

Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.

Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.

Tumor Conference
Weekly Thursday, 12 Noon.

G—I Conference
Weekly Friday, 12 P.M., Contact: C. Krone, M.D.

Inter-Hospital Medicine Conference
Weekly Friday, 7:15 P.M., Contact: S.V. Hilts, M.D.

OBGYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.

OBGYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403

Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 P.M., HSC Auditorium, Contact: Cancer Center

Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.

Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez

Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn

Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.

Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch

Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson

GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus

GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter

Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Room 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality In E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn

Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern

Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.

Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.

Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.

Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford

Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room

Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross

Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross

Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann

Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley

Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs

Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson

Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones

Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.

Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.

Psychiatric Grand Rounds
3rd, 4th & 5th Wed., 4-5 P.M., AHSC, Rm. 8403

Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital

Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.

Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson

Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655

Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich

Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.

Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C.

Uroradiology (Genitourinary Radiology)
2nd & 4th Mondays, 7:30- 8:30 A.M., AHSC, Contact: Dept. of Radiology

Renal Pathology Conference
1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.

Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Rm.

Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.

Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.

Trauma Conference
Every Thursday,4-5 p.m. UAHSC, Rm. 5505.

Ward Grand Rounds - Trauma
Weekly Tuesday, 8:00 A.M., Contact: Dr. M. Silverstein.

Toxicology Conference
Weekly Tuesday, 8:00 A.M., Contact: Dr. Keith Likes
Section.

Tucson Ultrasonography Group
Weekly Wed., 4:30 P.M., AHSC, Contact: Dr. I. Freundlich.

General Urology Conference
Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heibrumn, M.D. Approved for Category 1 credit.

GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.

Medical/Surgical GI Conference
1st & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Monday, 4 P.M., RM. 3134, Contact: Dr. Mertz, Ext 493.

GI Pathology Conf.
2nd & 4th Monday, 1 P.M., Path Conf. Rm, Contact: Dr. Partyka

Vascular Conference
2nd Monday, 3 P.M., Room 3134, Dr. Cintora, Ext 419

Surgery/Pathology Conference & Tissue Review
1st & 3rd Tuesday, 4 P.M., Room 2128, Contact: Dr. Likos & Mertz.

Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., Room 3134, Contact: Dr. G. Mertz.

GI Grand Rounds
Weekly Tuesday, 1 P.M., Contact: Drs. Sanowski, Kozarek & Partyka

GI Rounds
Weekly, 2 P.M., Contact: Dr. Burdick, harlan & Mitchell.

Dermatology Conference
1st, 2nd & 3rd Wed., 10 A.M. - C118, Contact: Dr. Roberts, Ext. 426.

Cancer Symposium
Weekly Wed., 1 P.M., T-5, Contact: Dr. Byrne, Ext. 426.
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wednesday,4 P.M., Rm 3134. Contact: Dr. Mertz, Ext. 493.
GI Clinic
2nd and 4th, 1 to 4 P.M., D-442.
Medical Surgical Chest Conference
1st & 3rd Thursday, Contact: Dr. Rohwedder or Dr. Gill.
Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5.
Consultant Rounds
3rd Friday, 8 A.M., Contact: Dr. Severino.
Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller
GI Resident Conference
Weekly 1 P.M., Room D-446.
Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for category 1 credit.
Medical Lectures
Weekly Thursday & Friday, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

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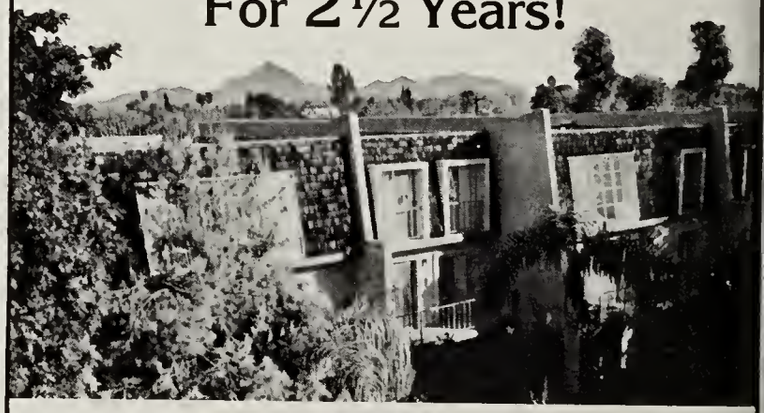
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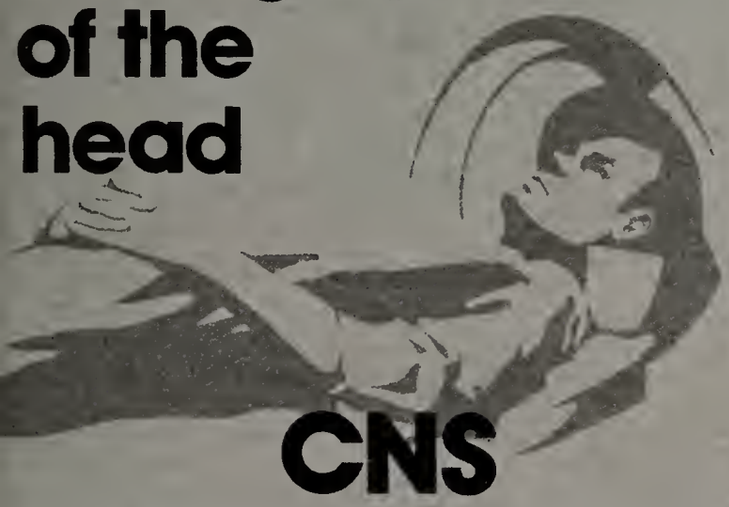
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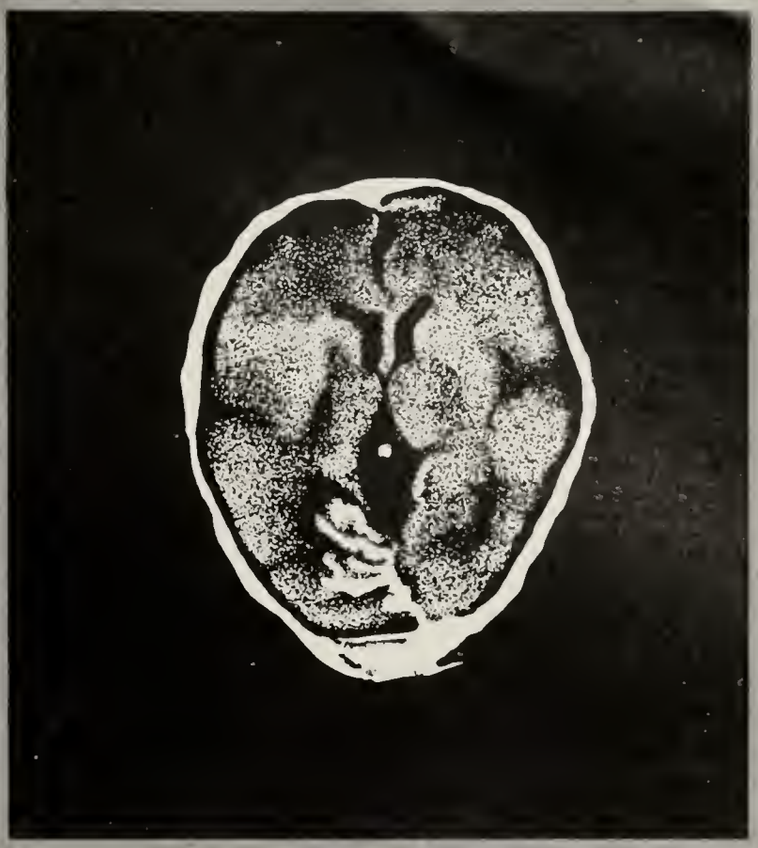
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INDEX TO ADVERTISERS

The Anesthesia Office, Inc. 289

Arizona Laminating 301

Borhringer Ingelheim
Catapres 286, 287, 288

Burroughs Wellcome
Neosporin Topicals 241

Camelback Hospital 246

Classified Ads 302, 303

Computed Neuorological Scanning Center 301

Computed Tomography 234

Comt-U-Med 235

Data Management Systems Corp. 289

Doctors Central Directory 302

Doctors Hospital 252

Eli Lilly & Co.
V-Cillin K 247

HBA Life Insurance 239

Health Agencies of the West 240

House of Mailings 302

Hughes River Expeditions 238

Janssen Pharmaceuticals
Monistat IV 248, 249, 250

Kiva Professional Plaza 300

Le Continental 300

Medical Bookstore 301

Mica Insurance Co. 245

Mullen Medical Service 302

Pharmacia Labs 253

Pfizer Laboratories
Sinequan 236, 237, 238

Roche Labs
Valium Second Cover, 238
Librium Third Cover, Fourth Cover

Roswell Bookbinding 234

William H. Rorer
Perdiem 242, 243, 244

Smith Kline & French
Tagament 285

Danny T. Sievert
Insurance 302

US Navy 238

Valley National Bank 251

Western X-Ray Systems, Inc. 284

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U of A College of Medicine Symposia

SEMINARS IN CONTINUING EDUCATION

Information Gatekeepers 326
Louis J. Kettel, M.D.

Endomycardial Biopsy 327
Jack G. Copeland, M.D., et al

Calcium Blocking Agents
New Directions in the Treatment of
Angina Pectoris 328
Lawrence P. Temkin, M.D.

Cytologic Diagnosis of Fungal Infections
of the Lung 333
Stuart F. Quan, M.D., et al

Differential Diagnosis and Treatment of a
Massive Dilated Abdominal Loop 336
Hugo V. Villar, M.D., F.A.C.S.

CT Use Statistics in A
Community Hospital 340
Michael S. Smith, M.D.

Mucocutaneous Lymph Node Syndrome (MCLNS)
-Kawasaki Disease- A Review 347
V. Fulginiti, M.D., et al

Stress and Human Disease
An Overview and Background 352
John Racy, M.D.

Intravenous Angiography
Utilizing Digital Video Subtraction 354
Theron W. Ovitt, M.D., et al

Use of Immunofluorescence and Electron
Microscopy in the Diagnosis
of Renal Disease 357
Anna R. Graham, M.D., et al

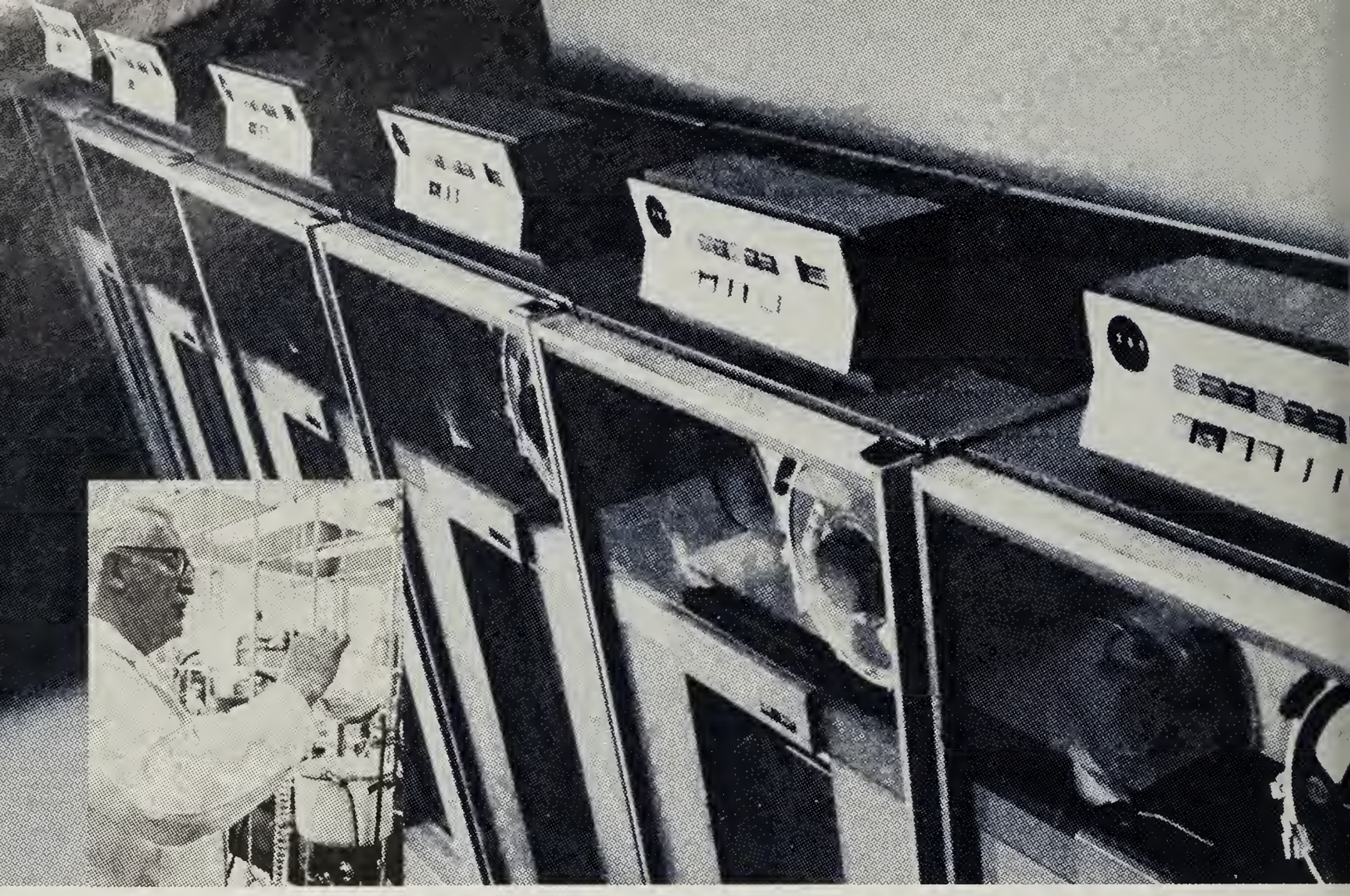
The Objective and Function of CME 360
Christine M. Haska

ARMA REPORTS 362

FUTURE MEETINGS 367

THE LIBRARY. ACQUISITIONS DIV.
U. OF CALIF., S.F.
SAN FRANCISCO, CA 94143

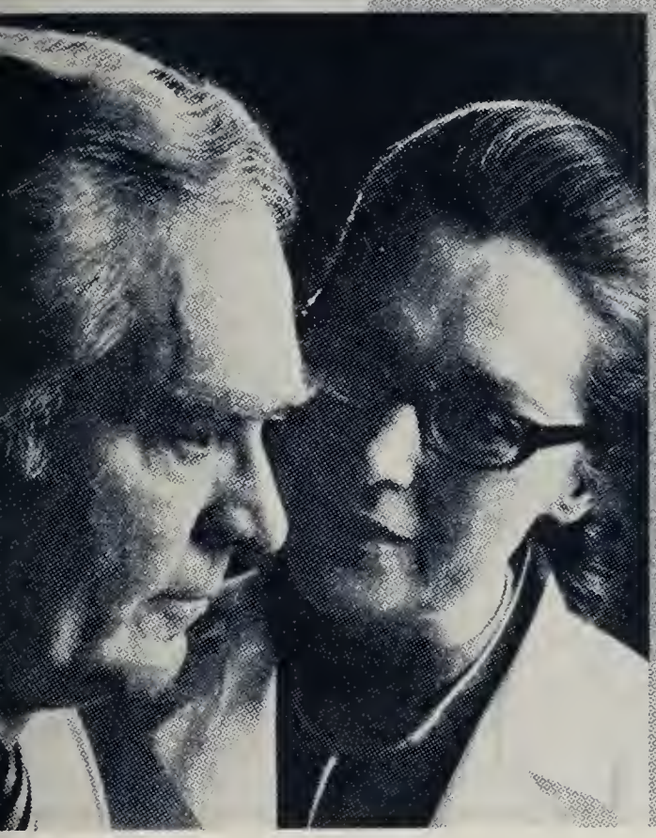
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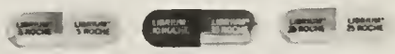
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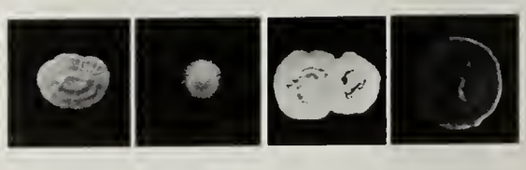
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Attn: D.T. Mallegol

Please send me more information about the use of MONISTAT i.v.™(miconazole) in systemic candidiasis and other systemic mycoses.

_____ M.D.

Address_____

City_____ State_____ Zip_____

Specialty_____

May, 1980

Pregnancy: Reproductive studies with MONISTAT i.v. in rats and rabbits revealed no evidence of impaired fertility or harm to the fetus. There are no data, however, on the use of the drug in pregnant women.

Children: Since the safety of miconazole i.v. in children under one year of age has not been extensively studied, its benefits in this age group must be weighed against the possible risks involved.

ADVERSE REACTIONS: Adverse reactions which have been observed with MONISTAT i.v. therapy include phlebitis, pruritus, rash, nausea, vomiting, febrile reactions, drowsiness, diarrhea, anorexia and flushes. In the U.S. studies, 29% of 209 patients studied had phlebitis, 21% pruritus, 18% nausea, 10% fever and chills, 9% rash, and 7% emesis. Transient decreases in hematocrit and serum sodium values have been observed following infusion of MONISTAT i.v. Thrombocytopenia has also been reported. No serious renal or hepatic toxicity has been reported. If pruritus and skin rashes are severe, discontinuation of treatment may be necessary. Nausea and vomiting can be mitigated with antihistaminic or antiemetic drugs given prior to MONISTAT i.v. infusion, or by reducing the dose, slowing the rate of infusion, or avoiding administration at mealtime.

Aggregation of erythrocytes or rouleau formation on blood smears has been reported. Hyperlipemia has occurred in patients and is reported to be due to the vehicle, Cremophor EL (PEG 40 castor oil).

DRUG INTERACTIONS: Drugs containing cremophor type vehicles are known to cause electrophoretic abnormalities of the lipoprotein. These effects are reversible upon discontinuation of treatment but are usually not an indication that treatment should be discontinued.

Interaction with the coumarin drugs resulting in an enhancement of the anticoagulant effect has also been reported. In cases of simultaneous treatment with MONISTAT i.v. and coumarin drugs, the anticoagulant effect should be carefully titrated since reductions of the anticoagulant doses may be indicated.

DOSAGE AND ADMINISTRATION:

DOSAGE

Adults. The doses may vary with the diagnosis and with the infective agent, from 200 to 1200 mg per infusion. The following daily doses, which may be divided over 3 infusions, are recommended:

Organism	Dosage Range*	Duration of Successful Therapy (weeks)
Coccidioidomycosis:	1800 to 3600 mg per day	3 to >20
Cryptococcosis:	1200 to 2400 mg per day	3 to >12
Candidiasis:	600 to 1800 mg per day	1 to >20
Paracoccidioidomycosis:	200 to 1200 mg per day	2 to >16

*May be divided over 3 infusions.

Repeated courses may be necessitated by relapse or reinfection.

Children. A total daily dose of about 20 to 40 mg/kg is generally adequate. However, a dose of 15 mg/kg body weight per infusion should not be exceeded.

ADMINISTRATION: MONISTAT i.v. should be diluted in at least 200 ml of fluid. The diluent of choice is 0.9% sodium chloride or alternatively Dextrose 5% injectable solution. The intravenous infusion should be given over a period of 30 to 60 minutes.

Generally, treatment should be continued until all clinical and laboratory tests no longer indicate that active fungal infection is present. Inadequate periods of treatment may yield poor response and lead to early recurrence of clinical symptoms. The dosing intervals and sites and the duration of treatment vary from patient to patient and depend on the causative organism.

OTHER MODES OF ADMINISTRATION: Intrathecal. Administration of the undiluted injectable solution of MONISTAT i.v. by the various intrathecal routes (20 mg per dose) is indicated as an adjunct to intravenous treatment in fungal meningitis. Succeeding intrathecal injections may be alternated between lumbar, cervical, and cisternal punctures every 3 to 7 days. Bladder instillation of 200 mg of diluted solution is indicated in the treatment of mycoses of the urinary bladder.

HOW SUPPLIED: MONISTAT i.v. is supplied in 20 ml ampoules.

MONISTAT i.v. (miconazole) is an original product of Janssen Pharmaceutica N.V., Belgium.

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In G.I. therapy



Adjunctive Librax®

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br

antianxiety/antisecretory/antispasmodic

for adjunctive therapy of duodenal ulcer* and irritable bowel syndrome*

Librax®

Please consult complete prescribing information, a summary of which follows:

Indications: Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma, prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium Bromide.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl/Roche) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

***Usage In Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.**

As with all anticholinergics, inhibition of lactation may occur.

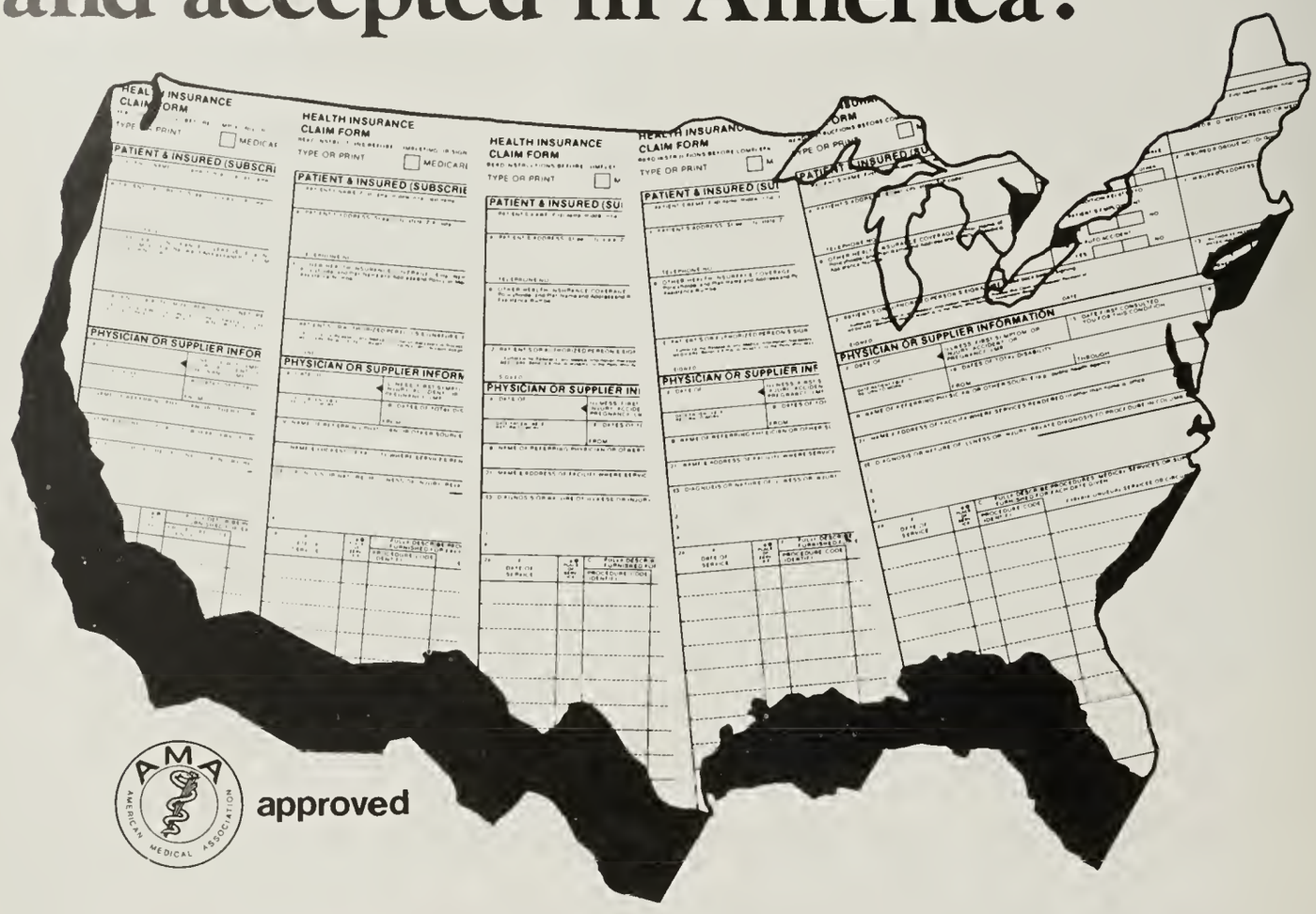
Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated; avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

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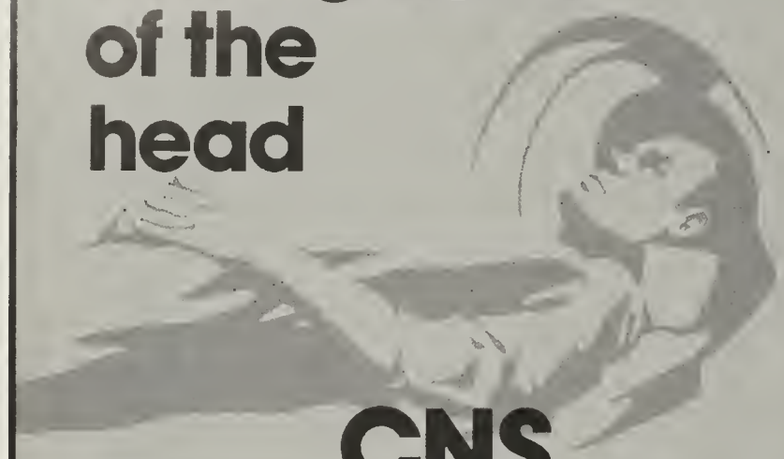
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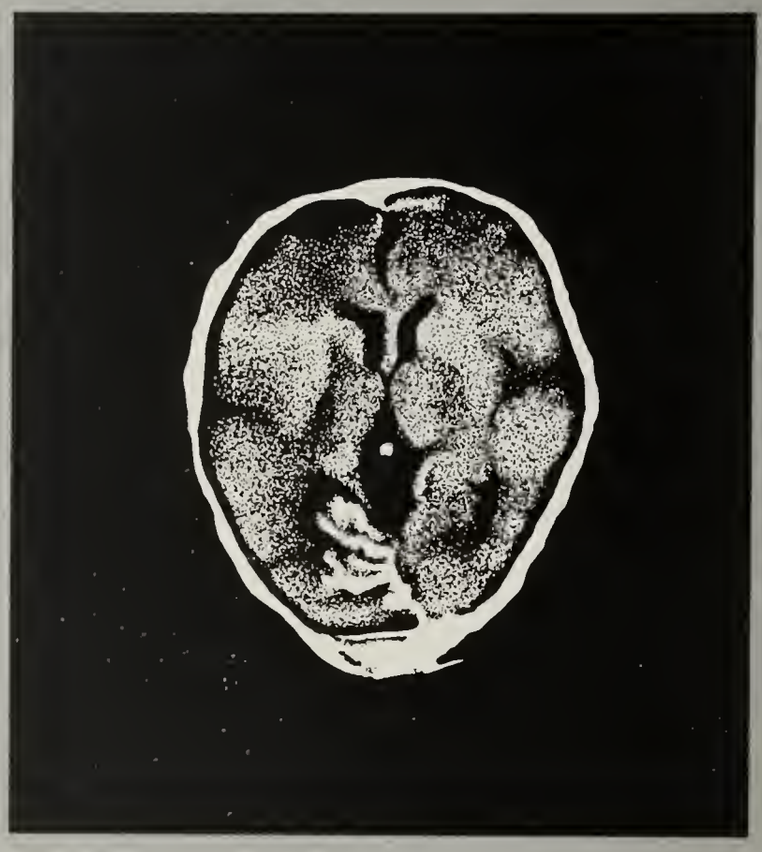
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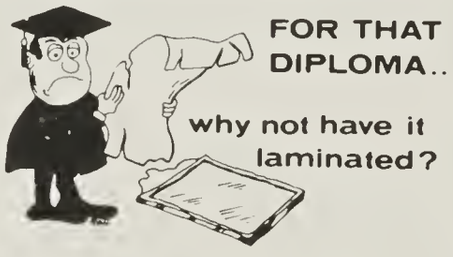


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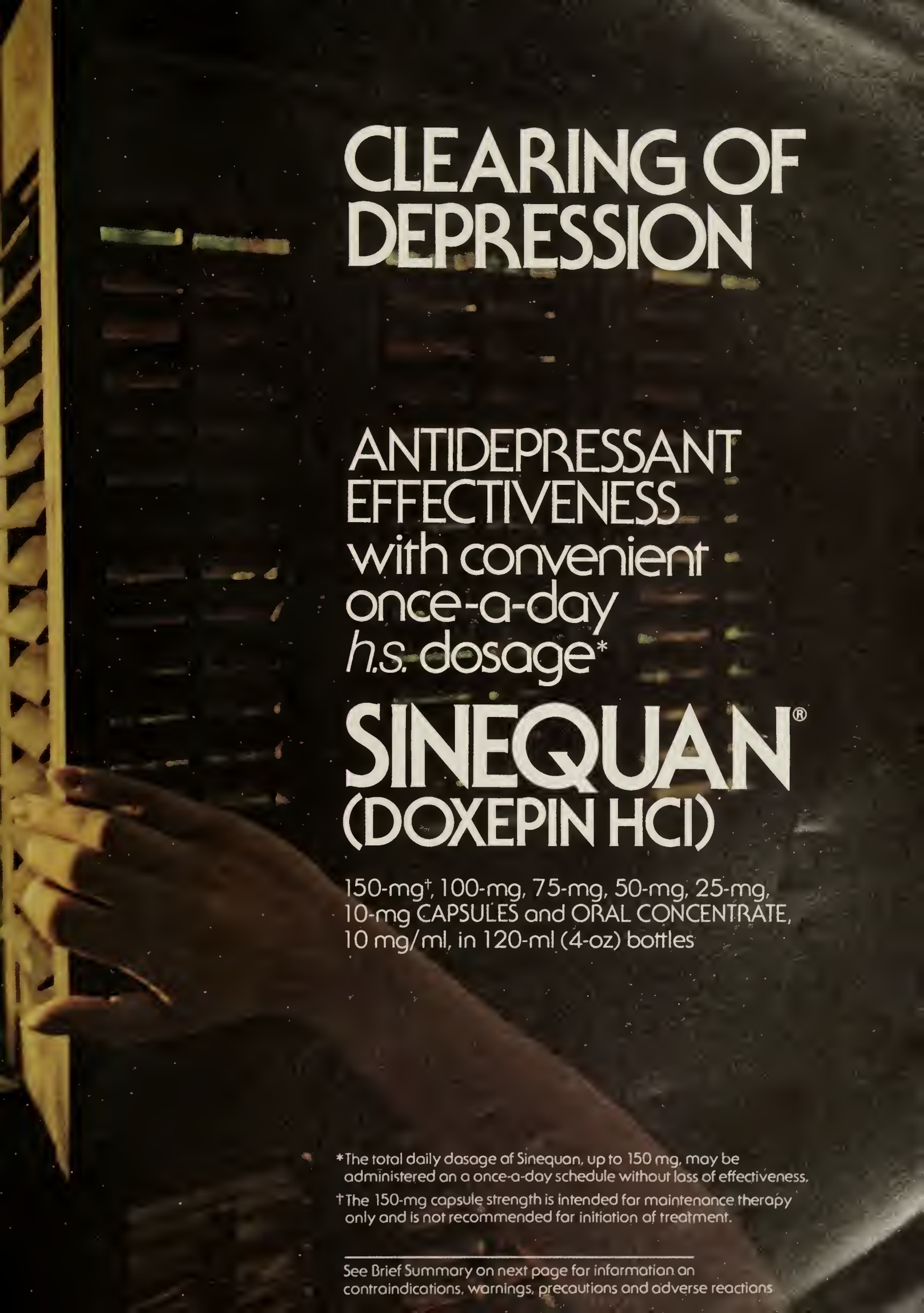
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SINEQUAN®
(DOXEPIN HCl)
150-mg†, 100-mg, 75-mg, 50-mg, 25-mg, 10-mg CAPSULES and ORAL CONCENTRATE, 10 mg/ml, in 120-ml (4-oz) bottles
*The total daily dosage of Sinequan, up to 150 mg, may be administered on a once-a-day schedule without loss of effectiveness.
†The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.
See Brief Summary on next page for information on contraindications, warnings, precautions and adverse reactions

ANTIDEPRESSANT EFFECTIVENESS

SINEQUAN®
(DOXEPIN HCl)

150-mg,* 100-mg, 75-mg, 50-mg, 25-mg, 10-mg CAPSULES and ORAL CONCENTRATE, 10 mg/ml, in 120-ml (4-oz) bottles

CONVENIENT ONCE-A-DAY *h.s.* DOSAGE

which may improve patient compliance. The total daily dosage, up to 150 mg per day, may be given on a once-a-day schedule without loss of effectiveness. Sinequan may also be given on a divided dosage schedule, up to 300 mg per day.

PROMINENT SEDATIVE EFFECT

which may help to relieve the difficulty in falling and staying asleep, and the early-morning awakening often associated with depression.

ESTABLISHED ANTIANXIETY ACTIVITY

to help alleviate the anxiety which often accompanies clinical depression.

USUALLY WELL TOLERATED

At doses up to 150 mg per day, Sinequan does not generally affect the antihypertensive activity of guanethidine and related compounds. Tachycardia and hypotension have been reported occasionally. Drowsiness is the most commonly observed side effect. Dry mouth, blurred vision, constipation and urinary retention have been reported.

EXTENDED RANGE OF DOSAGE STRENGTHS

for flexibility in individualizing therapy.

*The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.

BRIEF SUMMARY
SINEQUAN® (doxepin HCl) Capsules/Oral Concentrate

Contraindications. Contraindicated in individuals who have shown hypersensitivity to the drug, and in patients with glaucoma or a tendency to urinary retention. These disorders should be ruled out, particularly in older patients. Possibility of cross sensitivity with other dibenzoxepines should be kept in mind.

Warnings. The once-a-day dosage regimen of SINEQUAN (doxepin HCl) in patients with intercurrent illness or patients taking other medications should be carefully adjusted. This is especially important in patients receiving other medications with anticholinergic effects.

Usage in Geriatrics: The use of SINEQUAN on a once-a-day dosage regimen in geriatric patients should be adjusted carefully based on the patient's condition.

Usage in Pregnancy: Reproduction studies performed in animals have shown no evidence of harm to the animal fetus. Since there is no experience in pregnant women receiving this drug, safety in pregnancy has not been established. There are no data with respect to the secretion of the drug in human milk and its effect on the nursing infant.

Usage in Children: Usage in children under 12 years of age is not recommended because safe conditions for its use have not been established.

MAO Inhibitors: Serious side effects and even death have been reported following the concomitant use of certain drugs with MAO inhibitors. Therefore, MAO inhibitors should be discontinued at least two weeks prior to the cautious initiation of therapy with this drug. The exact length of time may vary and is dependent upon the particular MAO inhibitor being used, the length of time it has been administered and the dosage involved.

Usage with Alcohol: It should be borne in mind that alcohol ingestion may increase the danger inherent in any intentional or unintentional SINEQUAN overdosage. This is especially important in patients who may use alcohol excessively.

Precautions. Since drowsiness may occur with the use of this drug, patients should be warned of that possibility and cautioned against driving a car or operating dangerous machinery while taking this drug.

Patients should also be cautioned that their response to alcohol may be potentiated.

Since suicide is an inherent risk in any depressed patient, and may remain so until significant improvement has occurred, patients should be closely supervised during the early course of therapy. Prescriptions should be written for the smallest feasible amount.

Should increased symptoms of psychosis or shift to manic symptomatology occur, it may be necessary to reduce dosage or add a major tranquilizer to the dosage regimen.

Adverse Reactions. NOTE: Some of the adverse reactions noted below have not been specifically reported with SINEQUAN use. However, due to the close pharmacological similarities among the tricyclics, the reactions should be considered when prescribing SINEQUAN.

Anticholinergic Effects: Dry mouth, blurred vision, constipation, and urinary retention have been reported. If they do not subside with continued therapy, or become severe, it may be necessary to reduce the dosage.

Central Nervous System Effects: Drowsiness is the most commonly noticed side effect. This tends to disappear as therapy is continued. Other infrequently reported CNS side effects are confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, and extrapyramidal symptoms and seizures.

Cardiovascular: Cardiovascular effects including hypotension and tachycardia have been reported occasionally.

Allergic: Skin rash, edema, photosensitization, and pruritus have occasionally occurred.

Hematologic: Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura.

Gastrointestinal: Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, and aphthous stomatitis have been reported. (See anticholinergic effects.)

Endocrine: Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels have been reported with tricyclic administration.

Other: Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, and headache have been occasionally observed as adverse effects.

Dosage and Administration. For most patients with illness of mild to moderate severity, a starting daily dose of 75 mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75 mg/day to 150 mg/day.

In more severely ill patients higher doses may be required with subsequent gradual increase to 300 mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300 mg/day.

In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25-50 mg/day.

The total daily dosage of SINEQUAN (doxepin HCl) may be given on a divided or once-a-day dosage schedule. If the once-a-day schedule is employed the maximum recommended dose is 150 mg/day. This dose may be given at bedtime. **The 150 mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Antianxiety effect is apparent before the antidepressant effect. Optimal antidepressant effect may not be evident for two to three weeks.

Overdosage.

A. Signs and Symptoms

1. Mild: Drowsiness, stupor, blurred vision, excessive dryness of mouth.

2. Severe: Respiratory depression, hypotension, coma, convulsions, cardiac arrhythmias and tachycardias.

Also: urinary retention (bladder atony), decreased gastrointestinal motility (paralytic ileus), hyperthermia (or hypothermia), hypertension, dilated pupils, hyperactive reflexes.

B. Management and Treatment

1. Mild: Observation and supportive therapy is all that is usually necessary.

2. Severe: Medical management of severe SINEQUAN overdosage consists of aggressive supportive therapy. If the patient is conscious, gastric lavage, with appropriate precautions to prevent pulmonary aspiration, should be performed even though SINEQUAN is rapidly absorbed. The use of activated charcoal has been recommended, as has been continuous gastric lavage with saline for 24 hours or more. An adequate airway should be established in comatose patients and assisted ventilation used if necessary. EKG monitoring may be required for several days, since relapse after apparent recovery has been reported. Arrhythmias should be treated with the appropriate antiarrhythmic agent. It has been reported that many of the cardiovascular and CNS symptoms of tricyclic antidepressant poisoning in adults may be reversed by the slow intravenous administration of 1 mg to 3 mg of physostigmine salicylate. Because physostigmine is rapidly metabolized, the dosage should be repeated as required. Convulsions may respond to standard anticonvulsant therapy; however, barbiturates may potentiate any respiratory depression. Dialysis and forced diuresis generally are not of value in the management of overdosage due to high tissue and protein binding of SINEQUAN.

Supply. SINEQUAN is available as capsules containing doxepin HCl equivalent to: 10 mg, 75 mg, and 100 mg doxepin: bottles of 100, 1000, and unit-dose packages of 100 (10 x 10's). 25 mg and 50 mg doxepin: bottles of 100, 1000, 5000, and unit-dose packages of 100 (10 x 10's). 150 mg doxepin: bottles of 50, 500, and unit-dose packages of 100 (10 x 10's). SINEQUAN Oral Concentrate (10 mg/ml) is available in 120 ml bottles with an accompanying dropper calibrated at 5 mg, 10 mg, 15 mg, 20 mg, and 25 mg. Each ml contains doxepin HCl equivalent to 10 mg doxepin. Just prior to administration, SINEQUAN Oral Concentrate should be diluted with approximately 120 ml of water, whole or skimmed milk, or orange, grapefruit, tomato, prune or pineapple juice. SINEQUAN Oral Concentrate is not physically compatible with a number of carbonated beverages. For those patients requiring antidepressant therapy who are on methadone maintenance, SINEQUAN Oral Concentrate and methadone syrup can be mixed together with Gatorade®, lemonade, orange juice, sugar water, Tang®, or water, but not with grape juice. Preparation and storage of bulk dilutions is not recommended.

More detailed professional information available on request.

Pfizer **LABORATORIES DIVISION**
PFIZER INC.

An added complication... in the treatment of bacterial bronchitis*



Brief Summary.
Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

Usage in Pregnancy—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy—Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: In clinical studies in 1493 patients, adverse effects considered related to cefaclor therapy were uncommon and are listed below.

Gastrointestinal symptoms occurred in about 2.5 percent of patients and included diarrhea (1 in 70) and nausea and vomiting (1 in 90).

Hypersensitivity reactions were reported in about 1.5 percent of patients and included morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occurred in less than 1 in 200 patients.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory tests results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [070379R]

Some ampicillin-resistant strains of Haemophilus influenzae—a recognized complication of bacterial bronchitis*—are sensitive to treatment with Ceclor.[1-6]

In clinical trials, patients with bacterial bronchitis due to susceptible strains of Streptococcus pneumoniae, H. influenzae, S. pyogenes (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.[7]

Ceclor®
cefaclor

Pulvules®, 250 and 500 mg

* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

Note: Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Information Gatekeepers

Louis J. Kettel, M.D.
Dean, College of Medicine

The College of Medicine is again most grateful to *Arizona Medicine* for the invitation to submit papers for an entire issue. As in years past, we have encouraged the faculty to prepare papers highlighting new information and approaches to various topics in medicine with emphasis on practical application. I believe the objective is achieved in this issue and trust you will share the same personal pleasure I had in reading each of the articles.

While the College of Medicine has as its basic mission the education of undergraduate medical students, it has an equally important mission in the discovery, analysis and dissimenation of new knowledge. Classically, discovery is equated with basic research, but it also results from applied clinical research. The analysis or state-of-the-art review of science accomplishes this mission, too. Dissemination of knowledge occurs through various modalities of continuing education. *Arizona Medicine* is such a modality.

To remain prepared for these various missions, the faculty must stay intellectually current in their particular specialties and disciplines. They are motivated to meet this challenge by regularly preparing lectures, course offerings, research grant proposals and various manuscripts. Additionally, they are motivated because their very careers and longevity in teaching depend on demonstrating through the academic promotion process a thorough and modern depth of expertise. As I view the invitation to prepare an issue of *Arizona Medicine*, I believe the faculty thus prepared must react to this unique opportunity with a sense of responsibility which recognizes their important role as a state resource for knowledge.

Each of the articles in this issue was prepared in a somewhat general context. This for readability as well as to provide some overview. Each article also includes the most up-to-date information available. The information has been sorted and screened and included from the perspective of state-of-the-art at the time of writing. It should be no less. The major readership of *Arizona Medicine* is the practicing physicians in Arizona. They should depend on the College of Medicine faculty to be the gatekeepers of new knowledge.

Endomyocardial Biopsy

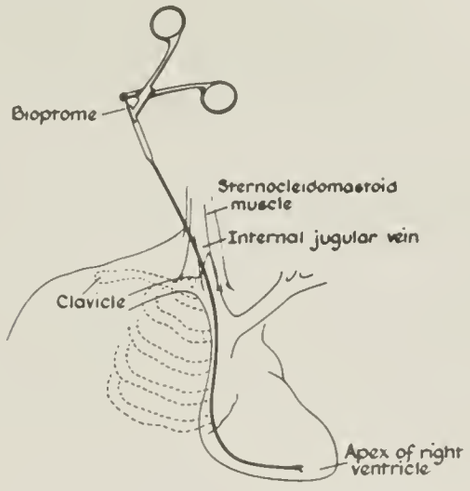
Jack G. Copeland, M.D.
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Transvenous endomyocardial biopsy was first reported in Japan in 1962.[1] Mechanical problems with the biopsy instrument and the absence of recognized indications for heart biopsy discouraged its use until 1972 when Dr. Philip Caves collaborating with Werner Schultz devised a flexible instrument for biopsy of the right ventricle.[2] This development, which was stimulated by the need for improved diagnosis of rejection in heart transplantation, was evaluated in dogs and humans and found to provide histologic evidence of rejection in the absence of clinical and electrocardiographic signs.[3] Since then, over 1900 endomyocardial biopsies have been performed at Stanford University Medical Center with no deaths and minimal morbidity. Since March 1979 at the University of Arizona Health Sciences Center, we have performed 60 heart biopsies with no mortality and one complication — a stable 10% pneumothorax which resolved spontaneously. In the interval since 1972, two major indications for heart biopsy have been identified: 1) heart transplantation and 2) evaluation of adriamycin cardiotoxicity. Several other indications are under investigation.

The Technique

Percutaneous transvenous right ventricular biopsy is usually performed in a catheterization laboratory where fluoroscopy and image intensification are available. The patient's right neck is prepared and draped in a sterile fashion. The head is turned facing left. Local anesthetic is injected in the triangle formed by the sternal and clavicular heads of the sternocleidomastoid muscle with the head of the clavicle. After positioning the patient in steep Trendelenberg position, an exploring needle is used to find the right internal jugular vein which subsequently is cannulated with an 8 Fr, catheter sheath. The Caves-Schultz bioptome is passed through the sheath and under fluoroscopic visualization into the right ventricle. (See Figure) The biting tip of the bioptime is used to remove a piece of muscle, usually 1 to 3 mm, from the right ventricular apical region. The tissue is immediately 1) placed in formalin, 2) placed in cold gluteraldehyde, or 3) frozen depending upon the desired histologic examination(s). This biopsy technique requires 10 to 20 minutes and may be done as an outpatient procedure.

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Heart Transplantation

Currently, heart transplantation results in 65% one year survival and 50% 5 year survival in patients with terminal cardiac disease. One of the major advances in cardiac transplantation in the last ten years has been endomyocardial biopsy.[4] Cardiac rejection involves the entire myocardium, consequently a biopsy from the right ventricular myocardium is representative of the entire heart. Furthermore, endomyocardial biopsies evaluated by light microscopy are more sensitive and specific in detecting rejection than any other currently available technique. The changes from normal include (in order from mildest to most severe): interstitial edema, perivascular lymphocyte accumulation, interstitial lymphocytes, muscle bundle loss, polymorphonuclear invasion, and interstitial hemorrhage. Rejection can, therefore be graded and therapy modulated accordingly.

Finally, the minimal morbidity and ease of performance of this procedure have made it possible to obtain serial heart biopsies from the same patient whenever indicated. The reliability of the technique is such that it has become a "gold standard" for the diagnosis of rejection.

Anthracycline Toxicity

Adriamycin, an anthracycline antibiotic, is recognized as an effective antineoplastic agent.[5] This drug can rarely cause acute toxicity after one to two courses including: a pericarditis-myocarditis syndrome, transient reversible myocardial dysfunction, and cardiac arrhythmias.[6] More commonly observed is a dose related irreversible cardiomyopathy resulting in congestive heart failure which may develop 60 days or more after completion of therapy and result in 50% mortality. Half of the patients receiving "maximal" total doses of this drug (550 mg/sq. meter) have no clinically dectectable abnormality.[7] Twenty-eight percent[8] of these may develop congestive heart failure.

Endomyocardial biopsies evaluated by thin cut (1 micron) sections with light microscopy or by electron microscopy have shown dose related graded changes in morphology characterized by myofibrillar dropout and

vacuolization. A wide range of biologic variability from one individual to another has been identified with some patients exhibiting toxicity with a dose as small as 180 mb/sq.m. and some showing no change with up to 810 mg/sq.m.

Clinical evaluation, including such techniques as echocardiography,[9-11] has not been valuable in planning therapy. Dose limitation based upon a level chosen as safe for most patients may, in fact, be cardiotoxic for some patients and may needlessly limit the amount of drug given in other less sensitive patients. Cardiac biopsy, a simple and safe diagnostic procedure, appears to provide a definitive technique of recognizing Adriamycin cardiotoxicity. In one series, over 100 patients have been treated with doses up to 810 mg/sq.m with no subsequent overt heart failure with the use of endomyocardial biopsy in determining dosage.[12]

Other Uses for Endomyocardial Biopsy

Endomyocardial biopsy may prove to be helpful in several other forms of heart disease. The differentiation between constrictive pericardial and restrictive myocardial disease may be particularly difficult in patients with histories compatible with both. Endocardial fibrosis is readily diagnosed with the endomyocardial biopsy. The differentiation between primary and secondary (hemochromatosis, sarcoidosis, collagen disease) cardiomyopathies may be helpful in the management of corticosteroid therapy. Finally, the diagnosis and therapy of myocarditis might be improved with information from serial heart biopsies.

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Calcium Blocking Agents

New Directions in the Treatment of Angina Pectoris

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In recent years, the diversity of clinical presentation in patients with ischemic heart disease has been well recognized. The failure of currently available therapeutic agents for symptomatic improvement of angina pectoris in many clinical subgroups and the relatively frequent incidence of drug related side effects has led to a search for pharmacological alternatives based on previously unrecognized mechanisms for control. Considerable recent interest has been directed to the potential therapeutic role of a new class of compounds that have been classified as "calcium channel blocking agents." These drugs, which appear to affect transmembrane flux of calcium ion, have been found to possess potent vasodilatory and muscle relaxation properties. The following discussion will attempt to review current understanding of the mechanisms responsible for the development of angina pectoris, the potential role for regulation of calcium transport in this setting, and the alternatives to antianginal therapy offered by several newer calcium blocking agents currently under active clinical investigation.

Mechanisms for the Development of Angina Pectoris

The pain of angina pectoris, thought to be ischemic in origin, is felt to result from transient imbalance between myocardial metabolic demand and myocardial blood and oxygen supply via the coronary circulation.[1] Exertion leading to increases in heart rate, blood pressure, and force of left ventricular contraction leads to transient increases in myocardial oxygen requirement. In the presence of fixed atherosclerotic coronary artery stenosis, the necessary increment in myocardial blood flow needed to compensate for the stress-related increment in myocardial oxygen consumption cannot be achieved leading to relative ischemia and the sensation of chest pain in association with electrocardiographic changes. If myocardial oxygen consumption, reflected by the product of stress-induced heart rate and blood pressure, exceeds a threshold value unique to each individual patient, angina will reproducibly result.[2] Resolution of stress-associated additional myocardial oxygen requirements after cessation of exertion leads to relief of pain and normalization of the electrocardiogram.

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This model would suggest the major initiating factors for transient cardiac ischemia are dependent upon changes in the demand element of the myocardial oxygen relationship. This explanation for "classical" exertion-induced angina cannot, however, account for the clinically recognized "variant" presentations of ischemic type chest pain occurring at rest or nocturnally either in the presence or absence of angiographically demonstrable coronary artery stenosis. Attention, therefore, has been directed to factors affecting and regulating coronary artery blood flow and myocardial oxygen supply.

The large epicardial coronary arteries, as other vascular beds, are associated with widespread sympathetic innervation. It has been experimentally shown that alpha adrenergic stimulation leads directly to coronary vasoconstriction and increased coronary vascular resistance.[3] Parasympathetic influence has also been implied through the demonstration of coronary constriction after methacholine administration and dilatation after administration with atropine.[4] The experimental demonstration of neurogenic control of vascular tone has suggested the possibility for alteration in coronary vascular resistance in response to physiologic stimuli.

Coronary arteriographic examination in man has frequently documented localized reversible coronary artery vasoconstriction or "spasm" after direct physical stimulation by intracoronary catheter insertion.[5] Reversible generalized coronary arterial spasm during spontaneous episodes of angina has been documented angiographically both in patients with and without associated atherosclerotic lesions demonstrable.[6] Studies employing constant monitoring have revealed that transient ischemia occurring at rest need not be preceded by hemodynamic alterations presumed to lead to increased myocardial oxygen necessity in patients prone to the development of coronary spasm.[7] It has therefore been established that transient alterations in coronary vascular tone presumed to be neurogenically mediated can lead to myocardial ischemia without antecedent augmentation of ventricular oxygen demand. Angina developing in this setting might best be termed "vasospastic." Coronary vasoconstriction need not occur only at rest. Recent evidence has demonstrated angiographic spasm in individuals with exertion-related anginal symptomatology.[8] Additionally, both vasospastic and stress-induced anginal patterns have been shown to frequently coexist in the same patient, regardless of degree or severity or distribution of underlying coronary stenotic lesions.[7]

It has been clearly shown that anginal pain secondary to reversible myocardial ischemia may result as a consequence of either stress-related hemodynamic alterations affecting myocardial oxygen requirements, spontaneous or exercise-induced changes in coronary vascular tone and patency resulting in depression of myocardial blood flow, or as a result of a combination of these factors affecting both oxygen supply and demand simultaneously. This realization has led to a further analysis of the biochemical mechanisms responsible for vasoconstriction and a search for agents that might control or prevent coronary spasm in a re-evaluation of current methods of therapy for antianginal treatment and prophylaxis.

The Role of Calcium in the Regulation of Muscle Contraction

The process of contraction of either vascular smooth, cardiac, or skeletal muscle after neurogenic, electrophysiologic, or pharmacologic stimulation is a function of the interaction of myofibrillar actin and myosin. These structural protein components are spatially arranged within parallel intracellular filaments. Interaction between actin and myosin leading to the formation of actomyosin interfilamentous cross linkages leads to myofibrillar shortening and subsequent tension development. Actin exists intracellularly as a helical polymer of small monomeric units which, in association with the protein tropomyosin, form thin structural filaments. Myosin, consisting of a pair of heavy amino acid chains and two pairs of light chains in parallel orientation to the actin thin filaments, possesses inherent enzymatic activity for the hydrolysis of adenosine triphosphate with the subsequent liberation of adenosine diphosphate, inorganic phosphate, and the physiologic "energy" necessary for muscle contraction to occur. This inherent adenosine triphosphatase (ATPase) activity is markedly enhanced in the presence of actin.

Calcium in muscle exists both in the extracellular space and intracellularly compartmentalized within the sarcoplasmic reticulum. In response to stimulation, the muscle membrane becomes permeable to calcium with resultant influx of cation from extracellular sites and release from the sarcoplasmic reticulum leading to increased intracellular concentration. During relaxation, calcium is withdrawn from the intracellular space by microsomal active transport mechanisms.

In smooth muscle, as is found in vascular wall, the activation of myosin ATPase by actin cannot occur unless one of the myosin light chain pairs has previously been phosphorylated and modified by the action of the enzyme myosin light chain kinase.[9] After smooth muscle membrane stimulation, intracellular calcium is bound to the specific protein calmodulin. The complex of calcium and calmodulin is then capable of binding to and activating myosin light chain kinase, allowing phosphorylation of the myosin light chain to occur. Phosphorylated myosin may then interact with actin with subsequent activation of myosin ATPase activity with resultant muscle contraction. Therefore, the biochemical modification of myosin prerequisite for smooth muscle contraction is dependent upon the presence of calcium through its preferential binding to calmodulin.

Smooth muscle relaxation is dependent upon the removal of phosphate from myosin light chain mediated through the action of a specific phosphatase which is not

calcium dependent. Therefore, as intracellular calcium concentration declines, action of myosin light chain kinase dissipates, allowing unopposed phosphatase activity rendering myosin unable to interact with actin.

Contraction of cardiac or skeletal muscle is not dependent upon myosin light chain phosphorylation. Complexed to tropomyosin in the thin filament is the specific calcium binding protein troponin. Increased intracellular calcium concentration following membrane stimulation leads to formation of calcium-troponin-tropomyosin complex which is capable of stereochemical alteration of the shape of the actin helix in such a way that actin-myosin interaction may occur with subsequent activation of myosin ATPase. Relaxation occurs as a result of decrease in intracellular calcium concentration leading to a return of the actin polymer to a shape minimizing actin-myosin interaction.

Control of intracellular calcium concentration is therefore responsible for initiation of contraction of either smooth or striated muscle, so-called "excitation-contraction coupling." Limitation of transmembrane calcium influx, therefore, will lead to muscle relaxation manifested as vasodilation in the case of vascular smooth muscle and decrease in the force of contraction of cardiac muscle.

Pharmacologic Blockade of Transmembrane Calcium Transport

Within the past twenty years, several agents with diverse chemical structure have been identified which appear to block or impede transmembrane calcium flux. As might be predicted from the preceding theoretical discussion, these agents have been demonstrated to lead to smooth muscle relaxation and vascular dilatation, both in the coronary and peripheral arterial beds, and depression of myocardial contraction thought secondary to effects on excitation-contraction coupling in cardiac muscle. The relative vasodilatory and myocardial depressant effects of specific agents within this group of "calcium blockers" appear to vary markedly as do specific pharmacokinetic properties. The potential clinical utility for three of the agents within this group is currently under active investigation.

Nifedipine (trade name: Adalat), a 1,4-dihydropyridone compound, is equally well absorbed after oral, sublingual, or buccal administration. The agent is highly bound to serum protein after absorption. Metabolism to a carboxylic acid and corresponding lactone yields pharmacologically inert metabolites. Renal excretion is responsible for 80% of drug elimination. The drug has been shown to be a potent direct coronary vasodilator and leads to marked decreases in peripheral arterial vascular resistance in both animal preparations[10] and in man.[11] Whereas intracoronary nifedipine administration has been shown to lead to significant myocardial contractile depression, the systemic administration of the drug with resultant decrease in peripheral arterial resistance and blood pressure leads to reflex beta adrenergic stimulation with subsequent positive inotropic and chronotropic response.[12] The expected negative inotropic effect of nifedipine, therefore, appears to be limited by inherent vasoregulative compensatory mechanisms.

Diltiazem (trade names: Anginyl, Herbesser), a 1,5-benzothiazopine derivative, is approximately 90% absorbed after oral administration. The drug is minimally protein bound and widely distributed to tissue sites of deposition. Metabolism largely via deacetylation yields metabolites of as yet unknown biologic activity which are subject to renal excretory mechanisms. A potent coronary vasodilator in animal preparations[13] with somewhat lesser effect on peripheral vasculature, recent study has suggested only limited myocardial depressive activity.[14] In contrast to the augmented heart rate response noted from nifedipine, diltiazem administration has been associated with the development of prolongation of atrial impulse conduction and symptomatic bradycardias felt to be secondary to a direct effect of the drug on sinoatrial node function.[15]

Verapamil[16] (trade names: Isoptin, Cardilox), a synthetic derivative of papaverine, is almost completely absorbed after oral administration. Metabolism, mainly via demethylation, occurs largely during initial portal circulation to the liver limiting bioavailability to approximately 15% of the administered dose. The drug is highly protein bound and the metabolites appear to be biologically active with elimination via renal excretion. Vasodilatory effects have been demonstrated for verapamil similar to those of other calcium blocking agents. This drug, however, has been found to be associated with significant myocardial depressant effects in excess of those of other agents.[14] The drug has been found to exacerbate congestive heart failure synergistically with beta blocking agents. This myocardial depressive capability has led to application of the drug to the treatment of obstructive hypertrophic cardiomyopathy. The other main utilities of the agent would appear to result from its antiarrhythmic potential for supraventricular and re-entrant tachycardias owing to direct effects on AV nodal conduction.

All calcium blocking agents share similar side effects primarily based on peripheral vasodilation and resultant postural hypotension. Flushing, orthostatic dizziness, nausea, and dysesthesias have been reported, but the agents generally appear to be well tolerated. Additional side effects based on electrophysiologic modification of AV nodal and sinoatrial function with diltiazem and verapamil appear to be clinically important. In addition, it would appear that all drugs must be potentially used with care in patients with congestive heart failure, however, the greatest precaution would appear to be necessary in the administration of verapamil in this setting.

Treatment of Angina Pectoris, The Role of Calcium Blockade

Therapeutic modalities currently utilized for antianginal prophylaxis have consisted mainly of beta adrenergic blocking agents and nitrate preparations.

The beneficial effects of beta blockers are felt to be derived through modification of heart rate and myocardial inotropy moderating myocardial oxygen demand.[17] Although nitrates appear to possess coronary vasodilatory activity, their antianginal effects are not felt to be mediated through this mechanism.[18] Peripheral venous pooling resulting from nitrate administration is felt to lead to decreased left ventricular filling with subsequent decrease in wall tension limiting cardiac oxygen consumption.[19] Clearly, the combination of beta blocking agents and long-acting nitrate administration leads to improvement of exercise tolerance in patients prone to the development of stress-induced anginal symptomatology.

In view of the diverse nature of clinical angina subsets as previously outlined and the multiplicity of potential etiologies for the development of transient myocardial ischemia, it is not surprising that medications designed to modify stress-induced cardiovascular responses and increments of myocardial oxygen demand might not necessarily be effective therapy in all cases. Although acute nitroglycerin administration at the time of anginal episodes of whatever underlying source will provide pain relief in almost all patients, pharmacologic techniques for prevention of angina as currently practiced are not universally applicable. In patients subject to rest or nocturnal pain thought to result from spontaneous coronary vasospasm either in the presence or absence of underlying atherosclerotic disease, the administration of beta blocking agents may be of limited therapeutic value or may lead to symptomatic exacerbation.[20] In theory, the pharmacologic blockade of coronary beta receptor might lead to unopposed alpha adrenergic activity with resultant vasoconstriction. Therefore, in patients with angina of primary vasospastic origin, the administration of agents with direct coronary vasodilatory activity would appear to offer substantial therapeutic benefit.

The demonstration of the ability of calcium channel blocking agents to produce experimental epicardial coronary vasodilation through vascular smooth muscle relaxation has led to the evaluation of these drugs as potential prophylactic treatment in cases of primary vasospastic angina. Several preliminary studies have been performed in small groups of patients with angiographically proven or clinically suspected spasm. Verapamil has been found to prevent spasm and control clinical angina in this setting in several studies.[21,22] Nifedipine has been noted to be an effective prophylactic agent in patients with variant angina and normal coronary arteriograms.[23] Recent review of nifedipine therapy in 100 patients with varying degrees of coronary atherosclerotic involvement and demonstrated or suspected spasm has indicated significant decreases in anginal frequency in the majority of patients with complete abolition of pain in 58% of cases.[24] Many patients within this group had previously shown no improvement with long-acting nitrate therapy. Clinical studies with diltiazem to date have been limited, although the agent has been shown to prevent pharmacologically induced coronary spasm in several patients with associated improvement in clinical state.[25] Further clinical studies of diltiazem are currently in progress at the University of Arizona Health Sciences Center in combination with other institutions. Although experience with calcium channel blockade for patients with primary vasospastic angina has been somewhat limited, the preliminary results would definitely indicate these agents to be effective therapy in this clinical subgroup. Of significant interest is the fact that the incidence of side effects requiring drug discontinuation has been remarkably limited and the agents appear to be well tolerated. It would also appear that the role of calcium blocking agents in this setting might be complementary to long acting nitrate administration and a combination of the two medications might be beneficial.

The potential role of calcium blocking agents in the therapy of patients manifesting only stress-induced pain patterns has recently been addressed. Preliminary clinical experience has suggested symptomatic benefit for patients with stable anginal patterns using either verapamil[26] or nifedipine.[27] The mechanisms responsible for these observed beneficial effects, however, have not been clearly delineated. Recently, it has been shown that nifedipine administration in patients with exercise-induced angina leads to improved performance during graded treadmill testing.[27] At any level of stress, resultant heart rate-blood pressure product is diminished after nifedipine as opposed to placebo. Although exertion duration and maximal stress tolerance improve significantly after nifedipine, peak maximal heart rate-blood pressure response is unchanged. If primary drug effectiveness were a direct result of coronary dilatation and improvement in myocardial blood flow, one might expect to find objective improvement in maximal myocardial oxygen consumption as determined by augmentation of maximal heart rate-blood pressure product. This has not been shown to be the case. Although isolated cases of stress-induced coronary artery spasm have been reported which appear to respond to administration of calcium blocking agents,[8] it would not appear that the effects of these medications are through primary coronary vasodilation in the vast majority of patients with exercise angina.

Several alternative mechanisms for the effects observed have been proposed. As previously noted, oral or sublingual nifedipine administration in man has been shown to lead to marked decreases in peripheral arterial resistance with decreases in both systolic and diastolic blood pressure. During stress after nifedipine, exercise-induced increments in blood pressure are moderated and increments in myocardial oxygen necessity associated with blood pressure rises are therefore regulated. In this way, one mechanism for calcium blocking agent control of exertion-related angina may be directly through peripheral mechanisms and modifications of

hemodynamics.[11, 27]

Although overall improvement in coronary flow does not appear to be active as a primary mechanism for antianginal control, recent experimental data has suggested that in patients with coronary artery disease, calcium blocking agent administration, particularly with diltiazem, may lead to beneficial redistribution of coronary flow to relatively ischemic zones through pre-existent collateral channels during experimental ischemia.[28, 29] In addition, improvement in contractile function in ischemic zones has been demonstrated. Theoretically, decreases in coronary arterial vascular resistance beyond areas of stenosis may improve relative perfusion to these areas through collateral pathways without associated augmentation of total myocardial flow.

A third mechanistic consideration similar to that which has been ascribed to beta blocking agents would be the potential beneficial effects on myocardial oxygen consumption associated with the negative inotropic properties of calcium blocking agents. As previously noted, these effects appear to be minimal for nifedipine and diltiazem and more significant for verapamil. Quite recently, it has been established that the administration of calcium blocking agents may be associated with significant depression of the rate of left ventricular myocardial relaxation which potentially may also contribute to myocardial oxygen demand.[30] It would appear that the combination of beta blocking and calcium blocking agents might offer potential synergistic effect on myocardial oxygen consumption for drugs other than verapamil. It is specifically the myocardial depressant effects of verapamil that would appear to limit its potential usefulness as an antianginal medication.

The experience presented would suggest that calcium channel blocking agents potentially may control myocardial ischemia of either vasospastic or stress-related etiology, although the mechanisms responsible for these effects differ in relation to the underlying pathologic abnormality. Additionally, the role of these drugs in clinical states where both mechanisms appear to be concurrently active has been advocated.

Frequently during the course of ischemic heart disease, patients with stable, exertion-related angina which appears to be well controlled with beta adrenergic blocking agents and long acting nitrate therapy will develop rapidly progressive pain patterns with resultant rest symptomatology. In this "unstable" or "pre-infarction" setting, therapeutic interventions involving increasing doses of previously applied medications may offer little additional benefit for pain control. It has been postulated that progression to unstable angina may be secondary to coronary spasm superimposed to underlying structural atherosclerotic disease. The possible role of coronary vasoconstriction in the etiology of acute myocardial infarction has been suggested[6] and spasm has been demonstrated angiographically in association with infarction episodes.[31] The addition of nifedipine therapy in the pre-infarction syndrome has recently been studied in selected cases and shown to lead to marked symptomatic improvement in patients previously refractory to therapy.[32]

In summary, it can be stated that control of coronary vascular tone mediated through the effects of calcium on muscle contraction appears to be important in the genesis of many forms of angina pectoris. The role of calcium blocking agents for prophylactic therapy of vasospastic angina appears to be clearly established and superior to agents currently available. The potential role of calcium blocking agents either alone or in combination with either beta blocking agents and nitrates for therapy of stress-induced transient ischemia or unstable angina has recently been suggested. Further clinical trials currently in progress will be necessary before the appropriate role of these agents in the therapy of ischemic heart disease can be clearly delineated. It is anticipated that nifedipine will become generally available within the next two years with additional agents reaching the marketplace shortly thereafter. It would clearly appear that the availability of the calcium channel blocking group of drugs will lead to major changes in patient management in the next decade.

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Cytologic Diagnosis of Fungal Infections of the Lung

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The diagnosis of pulmonary fungal infection by culture and serologic methods is often a difficult and time consuming process. Although it has been recognized for a number of years that pathogenic fungi can be detected during the cytologic examination of pulmonary secretions,[1-3] the clinical usefulness of this procedure for the rapid diagnosis of fungal infection has been emphasized only recently.[4-6] This review discusses the role of cytology in the diagnosis of pulmonary fungal infections, and describes our experience with cytologic techniques in the diagnosis of coccidioidomycosis.

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The clinical manifestions of pulmonary fungal infection are frequently nonspecific, simulating infections caused by other agents and pulmonary neoplasms. Definitive diagnosis usually necessitates culture of the fungus, a process which may require a number of weeks.[7] Other diagnostic modalities such as KOH (potassium hydroxide) preparations of the pulmonary secretions and fungal serologies may be negative in the presence of subsequently documented infection or not rapidly available for use in clincial decision making. Similarly, conversion of the coccidioidin skin test may occur days or even weeks following the onset of acute symptoms. In contrast, cytologic detection of fungi in pulmonary secretions is rapid, accurate and widely available. This is especially important when fever and pulmonary infiltrates occur in the immunocompromised patient. In this setting, need for making a specific diagnosis expeditiously often requires thoracotomy. When fungal infection is present the cytology examination may permit early diagnosis without the need for surgery.

Cytologic recognition of fungi in the pulmonary secretions has been reported to be diagnostic of infection resulting from a variety of fungi, including Blastomyces dermatitidis,[4,6,8,9] Cryptococcus neoformans,[2,10] Coccidioides immitis,[1,3] and Paracoccidioides brasiliensis.[5] In addition, fungi which may be pathogenic in appropriate clinical situations, such as Candida, Aspergillus, and Geotrichum, have been detected cytologically.[2,11]

Although special staining techniques for fungi are occasionally helpful in identifying the organisms, cytologic diagnosis depends primarily on recognition of the specific morphologic characteristics of the fungi and the refractile appearance of their cell wells as visualized with the Papanicolaou stain.[2,11] Blastomyces dermatitidis appears in cytologic preparations as single or budding spherical cells 8-15 μ in diameter with thick refractile "double contoured" walls.[8,9,11] Single budding is characteristic in contrast to the multiple budding observed with Paracoccidioides brasiliensis.[5,11] Crytococcus neoformans also appears as a budding yeast, but with a more variable diameter of 5-20 μ. The bud is tear drop shaped as a result of a narrow isthmus between the bud and the mother cell. Occasionally successive budding may lead to the formation of short chains.[10,11] Coccidioides immitis appears as a large spherule (Fig. 1A) 20-60 μ in diameter. There is no budding, but the characteristic endospores may be identifiable within the spherules (Fig. 1B).[3] Histoplasma capsulatum is a small 1-5 μ organism which for diagnostic purposes must be observed within neutrophils or histiocytes.[11] It is detected in cytologic preparations of pulmonary secretions only rarely. This is most likely a result of the small size of the organism which makes it difficult to identify in cytologic preparations. Recognition of other fungi such as Aspergillus or Geotrichum is more difficult because

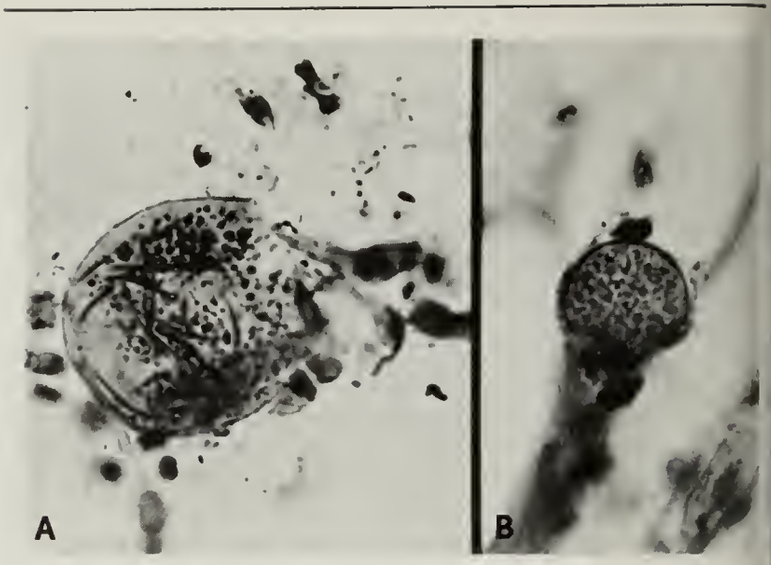


Figure 1A
Ruptured mature spherule of Coccidioides (Pap Stain x800, original magnification).

Figure 1B
Coccidioides spherule with endospores and refractile wall (Pap Stain x800, original magnification).

hyphal elements can be confused with nonfungal elements in the pulmonary secretions.[11] Although fungi have characteristic appearances in cytologic preparations, the accuracy and sensitivity of this technique depends largely upon the degree of awareness of the cytotechnologist. Training in the recognition of fungal elements in cytologic preparations appears to increase its sensitivity.[2,11]

The role of cytology in relation to other methods used in the diagnosis of pulmonary fungal infection has not yet been completely defined. A recent study however, suggests that pulmonary cytology may be the preferred method of diagnosis in North American Blastomycocis.[4] Cytologic examination was found to be more frequently positive than KOH preparations, and the diagnosis was made more rapidly than with culture of Blastomyces dermatitidis. Unlike Blastomyces dermatitidis, symptomatic isolated pulmonary infection with Crytococcus neoformans does not appear to be common except in immunocompromised patients. However, limited data suggest that cytologic preparations may be a useful method to make a rapid diagnosis.[10,11] With fungi such as Aspergillus and Candida which may be saprophytic and not necessarily pathogenic, the significance of cytologic identification must be interpreted in conjunction with clinical data.[11] In our experience over the past two years, fungal elements which were not Coccidiodes immitis were detected cytologically in four cases, and thought to be pathogenic. However, clinically it was apparent that the fungi were not causing disease in the patient.

Table 1
Cases of Pulmonary Coccidioidomycosis Diagnosed by Cytology

Patient's Age & Sex		Clinical Presentation	Respiratory Cytology For Spherules	KOH Preparations For Spherules
61	F	Cavitary lung disease for 13 years	3 sputums positive	1 of 2 sputums positive
67	M	Cavitary lung disease for 3 years	1 of 5 sputums positive	3 of 4 sputums positive
33	F	Carcinoma of parotid gland; pneumonia	1 sputum positive; 1 bronchial washing positive; 1 bronchial brushing negative	8 of 8 sputums negative
62	M	pneumonia	2 bronchial washings positive; 2 bronchial brushings negative	2 bronchial washings negative; 2 bronchial brushings negative
62	M	diabetes mellitus; pneumonia	2 sputums positive	2 sputums positive

M = Male; F = female; KOH = potassium hydroxide
Note: *Coccidioides immitis* confirmed by culture in all cases

Of more importance to physicians in Arizona and the Southwest is the role of cytology in the diagnosis of coccidioidomycosis. Although Coccidioides immitis can be easily and rapidly recognized in cytologic preparations,[3] the sensitivity of this technique is not known. Over the past two years at University Hospital, Coccidioides immitis has been identified cytologically in five cases, as summarized in Table 1. It is interesting to note that most of these infections were not in compromised hosts. KOH preparations failed to disclose the organism in two cases. Both sputum samples and bronchial washings were good sources of specimens, but bronchial brushings were not. Although our experience has been limited, the potential usefulness of cytologic examination in the diagnosis of coccidioidomycosis is illustrated by the following case.

A previously healthy 62 year old Mexican national entered the Arizona Health Sciences Center with a three week history of increasing shortness of breath, right pleuritic chest pain, cough productive of yellowish sputum, fever to 39°C. and night sweats. Nine days prior to admission, he was treated with multiple antibiotics for a right-sided pneumonia without improvement. On admission to University Hospital, the patient was a moderately ill appearing Mexican male with a temperature of 38.5° C. His exam was notable for diminished breath sounds with diffuse crackles at the right lung base. A chest radiograph revealed an extensive parenchymal infiltrate involving the entire right lung. Laboratory data on admission included a WBC of 21,300 without eosinophilia. Sputum smears for AFB and fungi (KOH) were negative. Arterial blood bases on room air were PO_2 50, PCO_2 36 and, pH 7.47. Since the patient was hypoxemic and had evidence of extensive parenchymal lung disease, he was bronchoscoped on his second hospital day with the intention of proceeding to thoracotomy if the bronchoscopy was non diagnostic. On his third hospital day, cytologic smears of the bronchoscopic washings revealed spherules consistent with Coccidioides immitis. This coincided with the report of a positive serology for Coccidioides immitis. A KOH preparation of the bronchoscopy washings however, was negative for fungal elements. The bronchoscopic washings subsequently grew Coccidioides immitis. In this case cytologic recognition of Coccidioides immitis in conjunction with positive serologic tests averted a diagnostic thoracotomy. In addition, cytologic examination was diagnostic, whereas the standard KOH preparation was negative.

At the present time, pulmonary cytology appears to be a useful diagnostic technique for the rapid diagnosis of some fungal infections. It may be the method of choice in the diagnosis of North American Blastomycosis, and in our recent clinical experience it is a useful tool in the rapid diagnosis of coccidioidomycosis.

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Differential Diagnosis and Treatment of a Massive Dilated Abdominal Loop

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The diagnosis of a massive, dilated, air-filled loop of the intestine rests between sigmoid and cecal volvulus, acute gastric dilation and pseudo-obstruction of the colon. Clinical suspicion, massive abdominal distension and a plain film of the abdomen are keys for the diagnosis. Early diagnosis and prompt treatment is imperative in order to minimize the high mortality and morbidity associated with all of them.

Volvulus is the actual folding of the bowel upon itself which may produce intestinal obstruction with or without occlusion of the mesenteric vessels. The incidence of volvulus of the large intestine is reported to range from 1 - 4% of all causes of intestinal obstruction.[1-3] The most common causes of large bowel obstruction are carcinoma and diverticulitis. Volvulus of the colon comprises about 10% of all causes of large bowel obstruction.

Sigmoid Volvulus

Volvulus of the sigmoid is the most common comprising about 80%, followed by volvulus of the cecum which comprises about 15%. Volvulus of the splenic flexure and transverse colon are extremely rare. Sigmoid volvulus is associated with a redundant sigmoid colon with a long mesentery on a short base. Mental retardation or chronic brain syndrome is commonly present in patients with sigmoid volvulus and helps explain the propensity of elderly people to develop this lesion. Precipitating factors often can not be determined, but pregnancy, abnormal peristalsis, intra-abdominal tumors, foreign bodies and previous surgical exploration have all been implicated. The redundant sigmoid loop most commonly rotates counterclockwise with the distended sigmoid lying in the right upper quadrant. The fact that the massively distended sigmoid loop rests side-by-side explains its classical x-ray appearance (Figure 1). A simple sigmoid volvulus produces acute colonic obstruction characterized by rapid and marked abdominal distension and an absence of flatus and stool. Nausea and vomiting occur in some. Physical examination reveals a distended, tympanic abdomen, often asymmetric. The distended loop of sigmoid can usually be palpated. The presence of strangulation with or without perforation is usually evident by general signs of toxicity and peritoneal irritation. Despite advances in surgical treatment, mortality rates have remained distressingly high. The overall mortality is about 28% for the first episode. The severity of sigmoid volvulus is enhanced by the usually prolonged duration of symptoms prior to admission to the hospital. In a series of 99 patients reported from Charity Hospital, the average patient stayed at home 5.2 days before admission.[5] Serious associated diseases, cardiovascular, obstructive pulmonary and renal disease further jeopardizes these patients condition. Finally, the association of mental and psychiatric diseases delays the diagnosis even further.[6-8]

Sigmoid volvulus should be decompressed through the proctoscope. Proctoscopic reduction is a highly successful procedure associated with a minimal mortality. The success rate of proctoscopic examination and rectal tube decompression is about 90%. Just positioning the patient in the jack-knife position will sometimes untwist the sigmoid. The risk of perforation, if carefully done, is minimal. If decompression is successful, elective resection of the sigmoid is recommended for good risk patients. If proctoscopic or even colonoscopic decompression[9] is unsuccessful or signs of peritonitis are present, an emergency operation should be performed. If no gangrene is present, detorsion and even resection with primary anastomosis can be done quite successfully. However, resection without anastomosis with an end sigmoid colostomy and a Harmann's pouch or mucus fistula is the safest procedure.

Cecal Volvulus

In cecal volvulus the cecum usually rotates in a clockwise direction obliquely towards the left upper quadrant. This twist is probably initiated by rapid excessive distension of the cecum by gas due to trauma, pressure hyperperistalsia, chronic constipation or ascites. As the hyper-mobile cecum increases in size, it is less able to dilate laterally and, in a patient without adhesions, the area of least resistance is upward and medial because of the non-rigid anterior abdominal wall. Ascites can be a contributing factor because it allows this distended and mobile cecum to float into the abdomen. The primary defect in cecal volvulus is an incomplete fusion of the cecum and ascending colon with the posterior peritoneum. This results in an abnormally mobile cecum and ascending colon and the possibility of rotation about a fixed point producing the volvulus. The fixed points are the hepatic flexure and the distal ileum. A mobile cecum exists in about 10-20% of the adult population.[1,2] The cecal volvulus causes, if the ileal cecal valve is competent, a closed loop obstruction of the cecum and ascending colon. Fluids and gas from the small bowel may continue to enter the loop with further distension of the cecum to gigantic proportions. As the torsion tightens, occlusion of the venous return

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Figure 1
Plain abdominal film shows a large air-filled loop of the intestine laying side-by-side, due to the counterclockwise rotation. This is the omega or the inner tube sign.



Figure 2
A large air-filled loop of colon occupies the left upper quadrant with its convex surface facing the left lower quadrant. Some features of small bowel obstruction are also present.

develops followed by arterial ischemia and eventual progression to gangrene and perforation. There is an ever present danger of cecal perforation and the development of localized sepsis or spreading peritonitis. The urgency of surgery is related to the degree of distension of the cecum. The greater the distension the greater the risk of perforation. It has been said that a cecal diameter greater than 10 cm has an increased chance of perforation.[10] According to the LaPlace's Law, the pressure in the wall increases in direct proportion to the square of the radius.

Clinically, patients with cecal volvulus present a picture of small bowel obstruction; nausea, vomiting, cramping abdominal pain and abdominal distension. The plain abdominal film will demonstrate a large distended loop of bowel with a central density. This lies in the center of the abdomen and toward the left upper quadrant. (Figure 2) Features of small bowel obstruction, proximal to the twist, could be present. The distal colon is usually collapsed. The treatment of patients with cecal volvulus is surgical. The closed loop obstruction must be relieved. There is an ever present danger of cecal perforation and localized sepsis or spreading peritonitis. The operative mortality of a simple cecal volvulus is less than 10% but when complicated by strangulation or perforation, it rises up to 50%. The proper surgical technique for correction of a cecal volvulus is a matter of controversy. The occurrence of a spontaneous cecal volvulus in the fairly young, otherwise normal individual, should be treated by resection to prevent recurrence.[11, 12] In the older patient with more complicated problems, plain detorsion with or without cecostomy should be contemplated. If the bowel is nonviable and necrosis is present, resection is also mandatory. In the older patient with complicated illness there must be more concern about immediate survival than for the possibility of future recurrence that is associated with plain detorsion and any of the many types of cecopexies that have been described.[13] Detorsion and cecostomy should be the operation of choice in the older, debilitated patient with associated medical problems.

Pseudo-Obstruction of the Right Colon

Massive dilation of the colon without obstruction and without obvious cause in patients with associated diseases was first observed by Ogilvie, a British surgeon,

in 1948.[14] This pseudo-obstruction often localizes to the cecum and the right colon and is associated with a significant mortality as a result of cecal perforation. (Figure 3) Characteristically, the colon distension has been unrelated to distal, mechanical obstruction or the obvious intra-abdominal causes of adynamic ileus.[15-18] This condition seems to be more common in men than in women and often occurs in sick, bedridden, debilitated patients. The overall mortality of this massive cecal dilation or pseudo-obstruction is about 30%. Longitudinal splitting of the tinea coli is a common finding. We have treated this syndrome with emergency laparotomy and cecostomy if the sequential films of the abdomen show no reduction in cecum size after a short period of observation (6-12 hours).[19] Decompression through the colonoscope has been reported recently but we are somehow concerned about using the colonoscope in these patients.[20] The high mortality of this lesion is mostly associated with the primary disease that motivates the patients admission to the hospital in the first place. The plain abdominal film will show a massive distended cecum, usually in the right lower quadrant. Distension of the right colon and even the first part of the transverse colon could also be present.

Acute Gastric Dilation

Acute dilation of the stomach may occur at any time in debilitated patients. It is most common in burn patients or in patients receiving oxygen therapy. It frequently accompanies septicemia and is not uncommon in tube feedings. It is an unusual cause of unexplained hypotension in the Recovery Room. It is characterized by regurgitation of fluids, upper abdominal distress, dyspnea, abdominal distension and, if untreated, circulatory collapse. This should always be ruled out when an air-filled mass is present on the plain film of the abdomen. (Figure 4)

Diagnostic Sequence

Diagnostic sequence in patients with massive abdominal distension should be as follows: history and physical, plain abdominal film and gastric decompression. (Table 1) If, after this work-up, the diagnosis is not clear, a proctoscopic examination and the insertion of a large rectal tube will reduce a sigmoid volvulus. Insertion of a rectal tube and even performance of barium enema will rarely reduce a cecal volvulus. The use of a barium enema in the diagnosis of intestinal volvulus is desirable if the correct diagnosis cannot be made with the plain abdominal film and proctoscopy, and, if the patients condition permits. It should obviously not be undertaken if there is any sign of peritonitis. In addition to making the differential diagnosis between sigmoid and cecal volvulus, a barium enema will rule out any distal obstruction lesion that may be present in patients with cecal volvulus. (Table 2).



Figure 3
A large distended cecum lying in the right lower quadrant with a transverse diameter of approximately 12 cm.

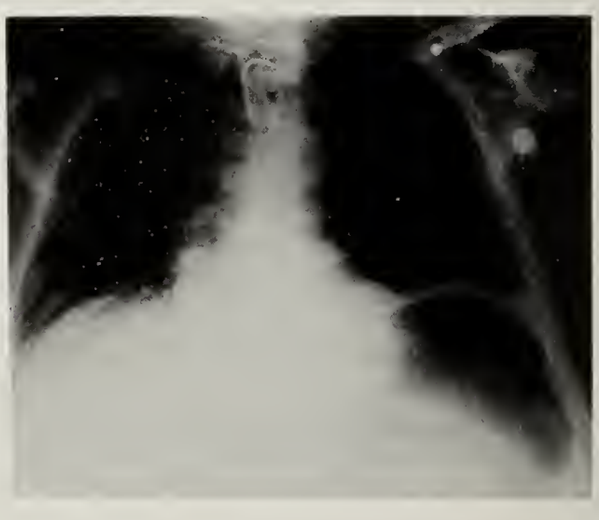


Figure 4
A large air-filled loop occupying the left upper quadrant. Notice the marked elevation of the left diaphragm.

Table 1

Work-up of a Massive Distended Patient

History and Physical
Gastric Decompression
Plain Abdominal Film
Proctosigmoidoscopy
Barium Enema

Table 2

	Sigmoid Volvulus	Cecla Volvulus	Pseudo-Obstruction	Gastric Dilation
Age	Old	Middle Aged	Old	No Difference
Sex	Predominately Male	Predominately Female	Predominately Male	Equal
Past History	Chronic Brain Syndrome Constipation	None	Sick, Bedridden Patient	Diabetes, Post-Op, Etc.
X-Ray	RUQ Loop	LUQ	Dilated cecum in RLQ	LUQ Loop
Rotation	Counterclockwise	CJockwise	None	None
Treatment	Proctoscopic Decompression Surgery for Recurrence of Complications	Surgical Detorsion, Cecostomy or Right Colectomy	Short Observation and Cecal Decompression	Gastric Decompression

Summary

The diagnosis of massive, dilated, air-filled loop of intestine rests between sigmoid and cecal volvulus, acute gastric dilation and pseudo-obstruction of the colon. Clincial suspicion, massive abdominal distension and a plain film of the abdomen are the keys for the diagnosis. Rectal decompression through the sigmoidoscopy is almost always successful in sigmoid volvulus. Early diagnosis and prompt treatment should minimize the high mortality rate associated with these unusual causes of obstruction.

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CT Use Statistics in a Community Hospital

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Computed tomography (CT) scanning of the brain, in the few years in which it has been available, has rapidly become a useful diagnostic tool. The safety, speed and quality of information gained have led to a proliferation of scanners. While currently, controls upon the indications for CT scanning are only sporadic, controls upon the location of CT scanners are well known. In order to delineate use characteristics of the CT scan, the statistics of nearly 15,000 CT scans were gathered.

Material and Methods

Fourteen thousand nine hundred four CT scans performed at Tucson Medical Center in a forty month period from July 1975 to November 1978 were reviewed. The scans were all performed on an EMI 1005 scanner, the only CT scanner at Tucson Medical Center during this period and the only CT scanner in Tucson until September 1977. Scans were performed with or without contrast; a contrast enhanced and non-contrast enhanced scan were considered as one "contrasted" scan in the tabulation. Scans were read by several radiologists; however, a neuroradiologist was responsible for the review of approximately 85% of the scans. Where the CT scan results were subsequently known to be in error, either by angiography or by surgery, the diagnosis was appropriately changed.

Results

Each year, the number of scans increased (Table 1). The sex incidence was remarkably constant. The percentage of referrals by neurologists or neurosurgeons varied slightly from 65% the first year to 57-59% the other years. Ten per cent of the scans were emergencies. Contrast use remained relatively constant, occurring in about 40% of scans.

As expected, older age groups had most of the scans performed (Table 2), the maximum being in the seventh decade, followed by the eighth and sixth decades respectively. One thousand six hundred sixty-three scans (11.2% of the total) were performed on children aged 16 or less, and nearly 400 of these scans were performed on children less than a year of age.

The twenty most common indications for CT scanning are listed in Table 3. These twenty indications accounted for 85.3% of all scans. That headache, brain tumor, stroke, seizures, and subdural hematoma lead the list is not surprising. Hydrocephalus was a common indication due to the large number of previously shunted patients who were frequently rechecked. It is perhaps surprising that syncope ranked eleventh as an indication and vertigo eighteenth, two entities which have a low yield for structural neurologic disease, especially that visible by CT scan. Orbital lesions, the twentieth most common indication, are a reminder of how useful CT scanning has become in orbital disease.

The results (Table 4) were also remarkably constant from year to year. More than half the scans were normal, and nearly three-quarters were either normal or showed varying degrees of atrophy. Hydrocephalus was common but was expected on most patients in whom scans were performed. Normal shunt function was seen in only about 20% of the cases in whom "shunt

Table 1

Year	Scans	M	F	?sex	Neurologist Referred	Non-Neurologist Referred	Unknown Referred	Emergency	Contrast Used
1	3672	1753	1878	41	2366	1273	33	361	1412
2	4378	2233	2124	21	2581	1756	41	594	1828
3	4888	2424	2455	9	2780	2103	5	406	2001
4 (4 mos)	1966	998	963	5	1166	800	0	159	786
Total	14904	7408	7420	76	8893	5932	79	1520	6027

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Table 2
Age Distribution (152 not stated)

Less than 1 year	382
1-9 years	825
10-19 years	1157
20-29 years	1677
30-39 years	1454
40-49 years	1533
50-59 years	2064
60-69 years	2644
70-79 years	2259
80-89 years	706
over 90 years	51

checks" were done.

The statistics in adults regarding concomitant indication and result were not gathered; however, one should note the relative yield of several disorders: acoustic schwannoma, 207 ordered, 29 found; arteriovenous malformation, 251 ordered, 31 found; subdural hematoma, 1223 ordered, 284 found; metastatic disease, 694 ordered, 232 found; abscess, 173 ordered, 63 found; pituitary disease, 247 ordered, 88 found. The seemingly high yield of scans for stroke, 1307 ordered, 1069 found, is undoubtedly due to a large number of incidentally found old strokes.

Pediatric statistics (Table 5) showed a somewhat higher number of normal scans, 61.7%, than in adults. Of note was that only five of ninety-two scans performed because of headache were abnormal: of these five, only three could be considered to give previously unsuspected information. Similarly, the yield of positive scans for seizures was also low, about 15 to 20%, many of the abnormalities being clinically suspected.

Discussion

Slightly more than 50% of the CT scans in this series were normal, and nearly three-quarters showed no significant abnormality other than atrophy. The proportion of normal scans is in agreement with other series.[1] [3] On the basis of cost, then, one could say that it cost nearly a thousand dollars for each abnormal scan found.

The extremely low incidence of abnormal CT scans in pediataric patients complaining of headache (only three of 92 patients) is noteworthy. This statistic has been noted previously[4] and would suggest that CT scanning has little to offer in the routine workup of a child with headaches, especially if the neurologic examination is normal.

The yield of abnormal CT scans for seizures overall was not computed; for children, the yield was about 15%. At least half of the abnormalities represented relatively static problems. In Yang et al's series,[5] a third of scans of pediatric patients with seizures were abnormal. Low yield groups for abnormal scans included children with generalized seizures, normal EEG, and normal examination. Higher yields for abnormal scans were obtained in neonatal seizures, partial complex seizures (psychomotor), and in generalized seizures with known etiology. The low yield of CT abnormalities of therapeutic significance here (five to ten per cent) closely agree with Yang's study (2.7 per cent) and others.[4] Neonatal seizures in the present study had a lower yield of positive scans (20 per cent) than the 68 per cent in Yang's series. It would appear that CT scanning might be more useful in the evaluation of older children with partial complex seizures rather than as a routine test in all children with seizures.

Table 3
Twenty most common indications for obtaining a CT scan

1. Headache	1892
2. Brain tumor	1501
3. Stroke	1307
4. Seizure	1234
5. Subdural hematoma	1223
6. "Organic Brain Syndrome"	902
7. Metastatic disease	694
8. Head injury	621
9. Hydrocephalus	610
10. Mass lesion, not defined	375
11. Syncope	324
12. Intracerebral hemorrhage	305
13. Posterior fossa tumor	282
14. Pituitary tumor	247
15. Transient ischemic attack	244
16. Arteriovenous malformation	215
17. Acoustic schwannoma	207
18. Vertigo	186
19. Abscess	173
20. Orbital lesion	167

Table 4
Results

1. Normal	7846 (52.7%)
2. Atrophy	2888 (19.4%)
3. Stroke	1069 (7.2%)
4. Hydrocephalus	414
5. Intracerebral hemorrhage	330
6. Subdural hematoma	284
7 .Mass, not defined	252
8. Metastasis	232
9. Glioma	200
10. Contusions	149
11. Post-operative changes	124
12. Normal shunt	96
12. Pituitary lesion	88
14. Subarachnoid hemorrhage	80
15. Meningioma	75
16. Abscess	63
17. Edema	52
18. Porencephaly	50
19. Skull fracture	46
20. Increased pressure	46
21. Aneurysm	35
22. Normal pressure hydrocephalus	32
23. Arteriovenous malformation	31
24. Acoustic schwannoma	29
25. Epidural hematoma	25

Table 5

Pediatric Scans

Total scans	1663
***Normal	1026 (61.7%)
***Abnormal	637 (38.3%)
Scans for headaches	92
***Normal	87 (94.6%)
***Abnormal	5 (5.4%)
	-2 abnormal on same patient and a third scan was interpreted as normal
	-1 hydrocephalus in patient with a shunt
	-1 consistent with "increased pressure"
	-1 with hydrocephalus
Scans for seizures	274
***Normal	230 (85.4%)
***Abnormal	40 (14.6%)
Seizures in patient less than a year of age	36
***Normal	29 (80.6%)
***Abnormal	7 (19.4%)

New scanning modalities in ultrasound are becoming more prominent. Gray scale B-mode ultrasonography, such as is performed on the new Octoson scanner,[6] may be used on children less that two before the skull is too thick to transmit ultrasonic waves. Such an ultrasound scan shows close correlation with the CT scan and may be performed faster, at a third the cost, in multiple planes and without radiation exposure. Ultrasound scanning will not replace CT; but, as shown in Table 6, half the CT scans in children age two and less were for indications that the Octoson scanner could have determined as well as CT (hydrocephalus, cysts, subdural hematomas, large intracranial masses). And, of the remainder, where Octoson scanning would not have been useful (intraventricular or subependymal hemorrhage, infiltrative tumors suspected) seventy per cent of the scans were normal anyway.

The purpose of this paper has been to show patterns of use of the CT scan which clinicians may consider when they order scans. In children, guidelines have been recently suggested.[7] In adults, such guidelines have not been forthcoming. Far fewer invasive neurodiagnostic procedures have been performed since the advent of the CT scanner. In the cases of pneumoencephalography or angiography, CT scanning has brought about dramatic declines in their use. One must remember, however, that CT scans are not infallible and may miss certain types of disorders, notably infection and, in half the cases, subarachnoid hemmorrhage due to aneurysm.[8] Isodense subdural hematomas[9] and some tumors[10] have been missed as well. With the rapid advances in CT technology, such as with higher generation scanners, faster scans with better resolution may be obtained. These new advances will increase the diagnostic accuracy of CT scanning but will not eliminate the need for other procedures, such as lumbar puncture or angiography.

Table 6

Total scans, age 2 or less	433
**Indication for scan would have been amenable to Octoson	216
**Indication for scan not amenable to Octoson	217

Acknowledgement

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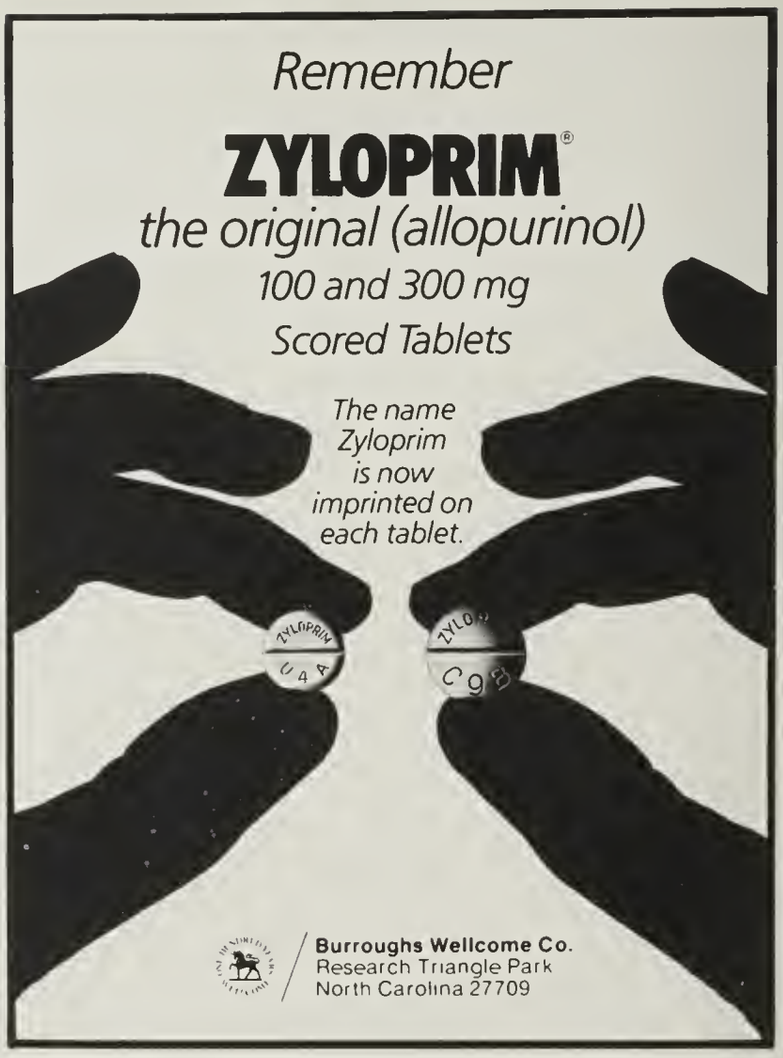
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Mucocutaneous Lymph Node Syndrome (MCLNS) -Kawasaki Disease-

A Review*

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H. Allen, M.D.
J. Corrigan, M.D.

Introduction

In 1967 a "new" disease was described by Kawasaki in Japan. Independently, Melish and co-workers described an identical syndrome in Hawaii. This entity, now referred to variously as mucocutaneous lymph node syndrome, Kawasaki Disease or Syndrome, or MCLNS or MLNS, consists of a group of signs and symptoms, no one of which is diagnostic, but in the aggregate separates this disorder from all others. More than 10,000 instances are on record in Japan, and increasing numbers are detected throughout the United States. The purpose of this report is to briefly review salient features of the disease and its complications, describe our experiences in Tucson, and indicate some approaches to management.

The Disease

MLNS is a multisystem disorder of unknown etiology. The diagnosis is established by the presence of five of the following six criteria, and by exclusion of other diseases (Table 1). The six criteria to be considered include: 1) prolonged fever; 2) conjunctival injection; 3) erythema and local inflammation of oral and peri-oral structures; 4) erythema, induration and desquamation of the distal extremities; 5) an erythematous generalized rash; and 6) a lymph node enlarged to greater than 1.5 cm. (usually cervical).

Fever: The disease has its onset with fever of the septic, spiking type, most often between 100° F. and 104° F. or higher. Five days of fever is essential for diagnosis, but the duration is often one and a half to three weeks, and is unrelieved by usual antipyretic measures or by antibiotic treatment.

Conjunctival Changes: The conjunctivitis has its onset within a few days of the onset of fever, and persists as long as a month or more in some instances. There is no purulence or corneal ulceration, but discrete and prominent injection is invariable, particularly of the bulbar vessels.

Oral and Peri-oral Changes: The most striking finding is the intensive erythema of the lips, tongue, buccal and pharyngeal mucosa. The erythema resolves within a few days, leaving crusted, fissured lips which may persist for one to two weeks. Papillae of the tongue become prominent, and with the erythematous background, yield a "strawberry tongue" not unlike that seen in scarlet fever.

Table 1

Diagnostic Features of MCLNS 5 of 6 major criteria needed	Time of Onset
1. **Fever** - septic-type; no response to usual antipyretics or antibiotics; most last 5 days or more	1st day
2. **Conjunctivitis** - non-pupulent; increased size of bulbar vessels	1st day
3. **Oral changes** - bright erythema; fissured lips; strawberry tongue	1st day
4. **Extremities** - bright erythema of palms and soles; edema hands, feet	3rd-5th day
Finger and toe-tips desquamate	2nd-3rd week
Furrows of nails	4-12 weeks
5. **Rash** - multiforme; macular; erythematous; extremities and trunk	1st day
6. **Cervical lymph nodes** - usually unilateral; 1.5 cm or more in size	1st-3rd day

Extremities: Intense erythema of the palms and soles is accompanied by firm, non-pitting induration of the digits. The appearance is both striking and characteristic. Within a week or two, desquamation is observed typically periungually and involving the digits, palms and soles.

Exanthem: The rash in this disorder is variable in both character and extent; it may resemble measles, scarlet fever, erythema multiforme, or non-specific viral exanthemata. It is not vesicular or bullous, and though often pruritic, does not crust. The intense erythema characteristic of the lips, tongue, mucosa and extremeties may also be evident in the exanthem. Fine desquamation occasionally occurs.

Lymphadenopathy: Enlarged node(s) are not always present; in only 70% of the Japanese and 50% of the Hawaiian cases was this criterion met. To be considered positive, the lymph node must be at least 1.5 cm. It is most often in the cervical chain and unilateral. When present, its size tends to parallel the febrile course with regional resolution with defervescence.

Additional Features: Almost three-fourths of the patients have *sterile pyuria*, of urethral origin. Small meatal ulcers have been described in a few males. Nearly all patients experience behavioral changes or other *signs of CNS involvement* (lethargy, listlessness, even coma).

Frank *arthritis* (20%) and *arthralgia* (40%) affects large joints, occasionally with effusions.

Gastrointestinal symptoms occur in 25% of patients with watery diarrhea and abdominal pain prominent. One-tenth of patients will have chemical evidence of *hepatitis* (elevated serum levels of SGOT, and SGPT and

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bilirubin). A spectacular complication involves *hydrops of the gall bladder*, evident as a right upper quadrant mass which usually disappears in 2-3 weeks.

Cardiac Involvement: The most serious consequences of MCLNS are related to cardiac involvement. Of the 1 to 2% who die, 90% are cardiac related. Although the actual frequency of cardiac involvement is unknown, the published data suggest that it probably ranges from 25-50% of all MCLNS cases. Most autopsy studies from MCLNS patients have demonstrated a widespread aneurysmal angiitis, especially of the coronary arteries, coronary artery thromboses, and resultant myocardial muscle infarction. These studies further suggest that the process of cardiac involvement is one of acute carditis and vasculitis with slow resolution. The carditis not only includes pericardium, myocardium, endocardium and valves, but also the conduction system itself. Weakening of coronary vascular walls leads to aneurysm formation which, along with subsequent stenosis, can form a substrate for possible thrombosis, especially in the hypercoagulable state. If thrombosis occurs, downstream myocardium is deprived of oxygen and infarction can result.

Laboratory Findings

All tests are non-specific and not diagnostic in themselves.

Leucocytosis (>20,000) with polymorphonuclear prominence, elevated erythrocyte sedimentation rate (ERS), increased C-reactive protein and marked elevation of platelets are all noted. The platelets increase during the second week of illness, and counts are often $> 450{,}000/mm^3$, occasionally reaching more than $1{,}000{,}000/mm^3$. Peak values are reached two to three weeks post-onset, before subsiding.

Some patients have elevation of serum IgE levels with normal levels of other immunoglobulins.

Elevations in serum levels of SGOT, SGPT and bilirubin occur in 25% of patients. Serum CPK and LDH may increase in myocardial involvement.

Most tests of collagen-vascular nature (ANA, LE cells preps, latex fixation, etc.) are normal.

Electrocardiography is a valuable tool for evaluating the patient with MCLNS. Prolongation of the PQ interval is a sensitive indicator of inflammation of the conduction system. Sinus tachycardia is usually present. Atrioventricular dissociation, atrial arrhythmias, and ventricular arrhythmias can also indicate conduction system or myocardial muscle involvement (or both). In the pancarditis stage decreased QRS voltage and flattening of the T-wave may be noted. Electrocardiographic patterns including R-wave loss, ST depression, and abnormal Q-waves indicate that infarction has already occurred.

Any electrocardiographic abnormality or change in these patients must be viewed as a strong indicator of associated cardiac involvement.

The chest-x-ray is usually normal. If heart muscle is myopathic, either due to carditis or infraction, or if a pericardial effusion is present, the cardiac silhouette may be enlarged.

Although the echocardiogram is usually normal in these patients, the presence of ventricular wall dysfunction or pericardial effusion may be detectable.

Two-dimensional echocardiography allows evaluation of wall dysfunction and visualization of the origins of the two major coronary arteries from the aorta. If these arteries are involved, dilation or aneurysms may be detected. However, abnormalities of the coronary arteries beyond the first centimeter distal to the aorta would probably not be detectable as they would be beyond the field of visualization.

Thallium scanning allows detection of areas where ventricular myocardial perfusion is decreased. This test has found great merit in adult patients with coronary artery disease but may or may not be applicable to the child. This area requires further research.

Angiography: Most angiographic studies in patients with MCLNS[5 8] have been accomplished by simple root aortography. Selective coronary arteriography has seldom been reported. The coronary abnormalities of aneurysm, stenosis or occlusion seem to be gross enough for detection by root aortography.

Direct visualization of the coronary arteries is, to date, the only real way to prospectively assess their involvement in MCLNS. The test should certainly be performed if any cardiac abnormalities are evident from the other means of testing. Evaluation of the asymptomatic patient whose other tests are normal is controversial.

Clinical Natural History in MCLNS

Some investigators have shown some regression of coronary aneurysms by serial aortography studies in a few MCLNS patients. In spite of some optimism about regression of the lesions, Kegel, et al reported a 12 year old patient who died of sudden infarction four years after disease onset.

Pathology

Detailed analysis of pathological changes are beyond the scope of this report. For details, see references.[2 5,8-10,12]

The major pathologic changes are a widespread vasculitis and perivasculitis. Pancarditis can occur. Striking abnormalities include aneurysms of the coronary arteries associated with thrombosis, myocardial ischemia and infarction, as discussed in the clinical section.

Epidemiology

Eighty percent of patients are under four years of age; the peak incidence in one year; a few cases in adults have been described. Males predominate by 1.5:1. All seasons and diverse geographic locations are involved; 29 states have reported cases thus far. Most children have been healthy prior to onset.

Excluding the Japanese and Hawaiian experiences, which are predominantly Asian or part-Asian children, MCLNS also occurs in both whites and blacks in the

United States. Morens, et al, reported an incidence of 2.73/100,000 Asian-U.S. children ≤ 8 years old, 1.03/100,000 blacks and 0.43/100,000 whites.

No other consistent epidemiologic features have been noted. No consistent genetic differences (chromosomal or haplotypes) have been recorded; some increase in HLA-BW-22, J2 has been reported from Japan.

Etiology

Cultures for bacteria and viruses have not identified a common etiologic agent. Isolation of a rickettsia-like agent in a few cases has not been further confirmed. The similarity to leptospirosis has prompted some to suggest this organism as causal, but there is not consistent evidence.

If an infectious agent is implicated, two possibilities exist: either it is one which cannot be isolated by currently available methods, and will require newer, more novel approaches (Legionnaire's disease was a recent example), or the disease is an immunologic response by the host to an antecedent infection. One example of this phenomenon is Coxsackie B virus-induced myocarditis, where the virus has often become undetectable by the time the cardiac symptoms are apparent. The tissue injury is thought to be a T-lymphocyte-mediated response to virus-induced neoantigens in the myocardium. Coxsackie viruses are ubiquitous worldwide, have a demonstrated tropism for cardiac and vascular endothelial tissues, and do represent candidates for causation of this disease. To date they have not been sought by intensive, appropriate serologic methods, and this should be done.

One of us (CGR) has had the opportunity to study only one patient serologically (a 5 year old girl seen in October, 1977), and that child showed an eight-fold fall in neutralizing antibodies to Coxsackie B_2 (1:256 to 1:32 over 15 days), with high titers to Coxsackie B_4 (1:512). We would welcome the opportunity to test further patients, but acute and convalescent sera are essential for interpretation.

Diagnosis and Differential Diagnosis

Apart from the cardinal signs enumerated and described earlier, aspects of cardiac evaluation are critcal. As in patients who have myocardial ischemia from congenital anomalous origin of the left coronary artery from the pulmonary artery, infants and young children with MCLNS can experience angina. Angina can mimic colic with the infant spontaneously screaming and drawing his knees to his chest. Attention must also be paid to the older child with MCLNS who complains of chest, neck or abdominal pain. The pain may be sudden, awakening the child, or can occur anytime, especially after eating. The patient may be diaphoretic and hypotensive at these times. The extremities may be cool and clammy. The saddest but most common presentation of the cardiac manifestation of MCLNS is cardiac arrest, either due to infarction, sudden complete heart block, or ventricular tachyarrhythmias.

The cardiac physical examination in MCLNS is usually normal. If the patient has an abnormal diastolic "gallop" rhythm with a loud diastolic third heart sound or any evidence of a diastolic fourth heart sound, ventricular muscle has lost compliance, usually indicating that infarction has already occurred. The same principle applies to the presence of an apical S1 coincident holosystolic mitral insufficiency murmur. During the pancarditis stage subtle findings of pericardial effusion, distant muffled heart tones, and occasional friction rubs may be noted. Effusions can occur in association with myocardial infarction and thus may represent a late finding.

Differentiation of MCLNS from the following disorders is based upon fulfillment of the diagnostic criteria previously outlined and negative evidence for:

1. Viral exanthems (e.g., measles, adenoviruses, enteroviruses).
2. Bacterial diseases, such as scarlet fever, staphylococcal toxin-induced syndromes ("scalded skin" syndrome or "toxic shock" syndrome), and leptospirosis.
3. Rickettsial disease, such as Rocky Mountain Spotted Fever (some patients have elevated titers to proteus OX-19 or OX-K antigens).
4. Toxoplasmosis.
5. Juvenile rheumatoid arthritis.
6. "Toxic" causes, such as ampicillin rashes, acrodynia.
7. Erythema multiforme, especially the bullosum variety (Stevens-Johnson Syndrome).

In teenagers and young adults, who are rarely affected, other possible diagnoses include infectious mononucleosis and secondary syphilis.

Our Experience

MCLNS has previously been reported from Phoenix and Tucson. At our institutions in Pima County we have definitely identified ten patients which one or more authors have personally attended; in addition, five other patients are known to us but not included in this report, since we have not attended them, or their disease occured after this report was prepared. All patients were seen from September, 1975 to the present; six were hospitalized at Tucson Medical Center, four at University Hospital. There were six males and four females. Other characteristics are shown in Table 2.

Not all patients were examined with all possible diagnostic modalities. Hence, less than ten is the baseline for some of the observations reported in Table 2. It is our plan to examine each new patient fully in light of current knowledge.

One patient presented with typical clinical features of MCLNS. Electrocardiography was within normal limits. Echocardiography suggested minimal pericardial effusion and posterior left ventricular wall dyskinesis. He improved clinically and was discharged from the hospital. Although aortography was considered, it was not done. Four weeks after discharge, the patient was considered clinically well and satisfactorily passed a physical examination qualifying him for life insurance. He died the night after that examination. At autopsy

marked aneurysmal involvement of the left coronary system was noted and left ventricular wall infarction was present.

Another patient, a six month old girl, has no clincial evidence of cardiac involvement. All clinical and laboratory studies were normal. Aortography was performed six weeks after her initial illness. At that time her platelet count and erythrocyte sedimentation rate were normal. Root aortography was normal. She has had no problems related to MCLNS for the two year period since her studies.

A third example, a two year old male who had no evidence of cardiac involvement by any form of clinical or laboratory tests including two-dimensional echocardiography had a root aortography performed two months after his illness, when platelet count and erythrocyte sedimentation rate were normal. A discrete aneurysm of the left main coronary artery near its bifurcation was noted. The patient continues on low dose aspirin therapy six months post procedure and has had no difficulty.

Prognosis

The disease is usually self-limited, albeit severe. Recovery is the rule, with no discernible sequelae. There is considerable controversy about the precise incidence of cardiac abnormalities residual in recovered patients. Estimates of 10-30% for coronary artery aneurysms are based upon non-uniform diagnostic criteria and have been criticized because of patient selection methods.

A mortality of one to two percent has been recorded. Sudden death between three and seven weeks after onset occurs in 90% of the fatal cases; all have been due to cardiovascular disease including myocardial infarction secondary to coronary thromboarteritis and aneurysms of the coronary arteries.

Clinical Comment: A certain risk is present in any MCLNS patient who has abnormal coronary arteries, particularly during the hypercoagulable state. Considerable controversy exists concerning a proper approach to these patients. Most agree that all patients should be initially evaluated and followed serially, incorporating the following: careful history regarding angina, accurate physical examination with respect to findings of alterations in left ventricular compliance, serial electrocardiograms and echocardiograms, and two-dimensional echocardiograms on a periodic basis to evaluate proximal coronary arteries. Root aortography should be performed if any of these test are abnormal. When (or whether) to perform aortography in asymptomatic patients who have no laboratory abnormalities is controversial.

Treatment

There is no specific therapy. Since platelet aggregation has been thought to play a major role in the coronary thrombotic events, anti-inflammatory agents have been utilized in an attempt to reduce complications and mortality. Definitive studies have not been performed, however. Thus far most experts avoid steroids and favor acetylsalicylic acid (aspirin) therapy.

Table 2

Selected characteristics of 10 patients in Pima County with MCLNS

Sex:	6 male, 4 female	
Race:	9 Caucasian, 1 balck	
Age:	6-75 months at onset	
Residence:	6 Tucson, 2 Springerville, 1 Louisiana, 1 Texas	
Symptoms and Signs *(see text for definitions)*		
Fever-		
Conjunctivitis-	10/10	
Oral changes-	10/10	
Extremity changes-	10/10	
Rash	10/10	
Lymphadenopathy-	6/10	
Laboratory *(see text)*		
Sterile pyuria	8/10	
Hematuria	5/10	
Leucocytosis	7/10	
PMN's	9/10	
ESR (24-69)	9/10	
Thrombocytosis	9/10	
SGOT	3/6	
CPK	0/4	
LDH	1/4	
IgE	1/2	
Outcome		
Mortality	1/10	Sudden death,
Aneurysms of coronary arteries	2/3	coronary aneurysms and thrombophlebitis with infarction

The trilogy of thrombocytosis, coronary aneurysms and sudden death are part of the clinical picture in patients with Kawasaki disease. Under normal conditions platelets that circulate in the blood do not adhere to each other or to normal endothelium; however, they can adhere and spread on nonendothelial surfaces, aggregate in a response to a variety of stimuli, secrete substances such as ADP and thromboxane A_2 that will cause further aggregation. In addition, substances secreted from the platelets may be involved in immune mediated injury, vasospasm, inflammation, atherogenesis, and other pathologic processes. Thus, agents that would inhibit platelet function would have wide biological implications. Aspirin strongly inhibits platelet aggregation by blocking the cyclo-oxygenase enzyme, thus preventing the synthesis of thromboxane A_2. The drug, however, has no effect on platelet adhesion. Endothelial cells synthesize prostacyclin (PGI_2), a substance which causes vasodilation and potently inhibits platelet aggregation. Since synthesis of prostacyclin is also cyclo-oxygenase dependent, the use of aspirin as an anti-aggregating agent for prevention of thrombosis might not be beneficial if used in the current standard dosage of 50-100 mg/kg/day. A number of recent studies have shown that low dose aspirin seems to be able to induce maximum in vivo inhibition of platelet aggregation without significantly effecting PGI_2 production by the vessel wall. Thus, in Kawasaki disease the aspirin dose that one would ideally want to use

would be one in which platelet function would be impaired by blood vessel secretion of the anti-aggregating agent PGI_2 would not. At the present time there are no controlled studies to suggest which dose is correct in patients with Kawasaki disease. The one study utilizing 30 mg/kg/day is the only one in which a "low dose" has been recommended. However, this also may be too high a level, since most of the current studies would suggest that a dose of 3.5 to 5. 0 mg/kg/da given once a day might be the optimal treatment regimen.

Thrombocytosis is quite common in a number of pediatric inflammatory diseases; thus with the current evidence it is not clear that the platelet is involved in the pathogenesis of aneurysms or myocardial infarction, or if the platelet count is a response to an inflammatory stimulus. Until such data are forthcoming it would appear prudent to treat patients with Kawasaki disease with an aspirin regimen using a standard low dose approach.

Some reports have documented successful treatment with coronary artery bypass surgery if coronary abnormalities include stenosis. Surgical treatment must be viewed with some caution because experience with the long term results of coronary artery bypass in the pediatric patient is quite limited. This form of treatment has been somewhat successful in patients with anomalous origin of the left coronary from the pulmonary artery which is completely different process from coronary artery aneurysms and stenosis found in MCLNS.

Discussion

This disease is not frequently encountered. When it occurs, the clinician must first recognize it and then utilize approparite diagnostic and therapeutic measures based on current understanding of pathophysiology and therapeutics. As of this writing we suggest the following points for clinicians to consider:

1. Learn the cardinal features and apply them to a febrile child with the striking erythematous changes in the oral mucosa and extremities.
2. Obtain a total white cell count, sedimentation rate, urinalysis, platelet count and estimation of SGOT, bilirubin, LDH, IgE and and EKG.
3. Obtain a cardiac consultation, preferrably with someone familiar with this disease and/or the literature. Since echocardiography is playing an increasing role in diagnosis, capacity to obtain and interpret single and more sophisticated ECHO tracings is critcal.
4. Institute aspirin therapy. ASA should be used in a single dose, once every 24 hours (i.e., 30 mg/kg/da or less). The patient should not have a detectable serum salicylate level. If they do then one would expect the PGI_2 production was reduced.
5. Hospitalize, if necessary, during acute phase and discharge when fever is under control, cardiac status ascertained and other symptoms subside - usually five days or so.
6. Follow patient in office twice weekly for up to four weeks and weekly thereafter until all signs and symptoms subside. Return of the sedimentation rate to normal is a useful guidepost.
7. Monitor CBC, platelets, ESR, salicylate level and EKG once weekly until ESR returns to normal.
8. Maintain aspirin until ESR is normal, then discontinue unless cardiac disease present, then continue low dose for one year.
9. Periodic cardiac followup based upon a) cardiac consultant's adivce, b) EKG changes, c) status of myocardium, d) presence of antigens.

Our understanding of this disease is dynamic at present. Those caring for such children should keep abreast of the literature in order to benefit from additional information on etiology, diagnosis, medical management and specific cardiac measures, •such as surgical intervention.

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Stress and Human Disease
An Overview and Background

John Racy, M.D.

Man has always recognized that he is a creature of his environment. Ancient Egyptian and Greek documents give testimony to the association between man's psychic state and his physical health.[1] Whether in trephining the skull to let evil spirits escape, or in describing the wanderings of the uterus in hysterical women frustrated in their love lives, they give recognition in their own way to the indissoluble connection between psyche and soma. The humoral theories of illness admitted emotions, as well as other noxious agents, into the etiology of disease and made no distinction between mind and body. Biblical reference to and folk tales about men afflicted by grief and pining away because of disappointment or unrequited love reveal the same awareness. With the dominance of the Cartesian duality of mind and body that has become the hallmark of western thinking about man, a gap was created between psychological and somatic understanding of the human condition. The term "psychosomatic," while bridging the gap, affirms this duality. First used in 1818 by Heinroth[1] to describe insomnia, it did not enjoy currency until the middle third of the twentieth century. In fact, modern psychosomatic medicine is largely derived from psychoanalytic theory. Georg Groddeck, a little-recognized pioneer, held the startling view that all disease is "a vital expression of the human organism," that it is both a communication about and an attempt at mastering a difficult situation, and that the "choice" of illness and its manifestations are fundamentally symbolic.[2] Twentieth century psychiatric pioneers in the field of psychosomatic medicine include Adolph Meyer,[3] Franz Alexander,[4] Florence Dunbar,[5] Arthur Mirsky,[6] and George Engel.[7] These and other workers were impressed, on the basis of individual case studies, by the linkage between certain psychological configurations and the development of particular diseases. From their work emerged a whole series of theories ranging from personality specificity,[5] the predilection of certain personality types for certain diseases, to conflict specificity,[4] whereby struggles around specific affects tended to produce specific diseases, to formulations regarding bereavement and loss (real, threatened, or imagined), and the individual's feelings of hopelessness, helplessness, giving up, and perceiving oneself as given up.

As a result of these efforts in the twentieth century, six to ten diseases emerged as the major psychosomatic disorders. With a few variations, the list included peptic ulcer, ulcerative colitis, rheumatoid arthritis, bronchial asthma, essential hypertension, neurodermatitis, and hyperthyroidism. Somewhat humorously, these were referred to as the "deadly seven," or the "holy seven."

Independent of this psychoanalytically oriented psychosomatic development, workers starting from a physiological base have also added to our understanding of this complicated field. Among these is Walter Cannon,[8] who wrote of the fight/flight responses to threat, and hinted that this may be a factor in the causation of illness, Hans Selye, who described the general adaptation syndrome,[9] Wolf, Wolff,[10] Rosenman and Friedman.[11]

Today, we witness a convergence of stress studies and psychosomatic models of disease. The psychosomatic view of illness is rapidly becoming obsolete, and the list of so-called psychosomatic disorders has largely been set aside. It has become useful to study the psychosocial factors in all diseases. There is increasing recognition that all illness is multi-causal in origin. Psychosocial factors, while significant, are rarely sufficient to account for illness, and elements of vulnerability or predisposition must almost always be invoked. Furthermore, there has been a shift away from a strict psychosomatic two-way orientation dwelling on interactons between mind and body to studies attempting to elucidate underlying and antecedent factors that could lead to disturbance of behavior and physiological state. There is less concern with A causing B and more with C causing both.[12]

What then is stress? This deceptively simple concept creates surprising difficulties. Part of the problem is that it is virtually impossible to define stress without speaking of the response, thus contaminating the field of research into stress as a factor in disease. Yet, for practical purposes, one can look upon stress as any event that alters the steady state or challenges the adaptive capacity of the organism. Investigators have drawn up lists of events generally regarded as taxing one's adaptive capacity, and assigned to these, on the basis of rater jugements, various life-change scores. Examples

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are the well-known studies of Holmes and Rahe in Seattle.[13] Their approach has much to recommend it. It involves a minimum of theorizing, it deals with phenomena that are easily studied, it appears objective, and it lends itself to statistical analysis. Despite these many advantages, life events studies fail to predict what illness will occur in whom or why, and suffer from serious methodological flaws, not the least is that many, perhaps most, of the events listed could be construed as manifestation of illness in themselves.[14] This, of course, brings us back to our starting point, whereby a definition of stress in terms of its effect confounds the research problem hoplessly.

One of the more interesting features of life events studies is the inclusion of both pleasant and unpleasant occurences among stresses. There are both logical and investigative grounds for a distinction between desirable and undesirable events. Similarly, one can profitably examine the locus of control and whether an event signifies an entry into a person's system or an exit from it.[15] It has even been suggested that non-events could be significant stresses if they entail unfulfilled expectations.[16] So far, no one has devised a method for studying non-events and their effect on health.

Be that as it may, most recent writing shows a trend away from the strictly impersonal objective approach and towards a greater awareness of subjective interpretation and response. In my view, the critical element in pathogenic stress is its capacity to induce internal conflict. Thus, desirable events, however momentous, do not contribute to illness unless they engender a state of internal conflict and strife.

In terms of the response to stress, investigators have looked at the whole aggregate of physical and mental illness or help-seeking behavior (as Holmes and Rahe have done), at particular groups of disorders, and at specific illnesses. For example, recent research has been reported on coronary heart disease and its possible relationship to the type A personality.[17]

How does a psychosocial event become translated into an illness? Almost all students of the field are impressed that in the absence of predisposition or a pre-existing condition, stress is an insufficient agent of disease. Given a predisposition or vulnerability, the brain operates as the main organ of transduction of psychosocial stress into illness. Psychoneurohumoral pathways have been postulated or described encompassing the limbic system, the hypothalamus, the pituitary, the autonomic nervous system, and perhaps most intriguingly, changes in immune response lowering the body's resistance to various noxious stimuli.[17] Perhaps equally important are the indirect influences whereby psychological distress affects the person's habits, such as sleep, diet, exercise and exposure to noxious influences, which, in turn, may be instrumental in producing disease.

The modifiers of stress and the response to it include a whole host of predisposing factors that bear on health, illness and longevity. They include genetic coding (for example, a high pepsinogen level seems to increase the risk of peptic ulceration),[6] intrauterine influences (for example, the offspring of prematurely weaned rat mothers have a higher vulnerability to gastric ulceration when restrained even though they are not prematurely weaned),[18] perinatal influences, events occuring at critical stages of development, and the state of mental health (Vaillant's recent work showed that good mental health retards middle life deterioration in physical health).[19] Others include marital satisfaction, work satisfaction, the availability of social supports (studies of pregnant women have shown that the presence or absence of social support significantly modifies the deliterious effects of life changes),[20] economic status, religious and philosophic belief systems,[21] personality style (for example, the influence of the type A personality typical of the driven, time-bound competitive person who is twice as predisposed to coronary heart disease as the more placid, easy-going, non-competitive type B person),[11] and indirect factors alluded to earlier, such as diet, exercise, consumption of alcohol, and smoking. One factor worthy of mention, both as a predictor of disease and a measure of it, is sleep. This poorly understood universal phenomenon can tell us much about man's psychic and physical health. There are indications that those who sleep regularly are healthier and live longer than those afflicted by an excess or lack of sleep.[22]

While it has been instructive to study the relationship between certain life styles and events, and the occurence of disease, it may be equally instructive to look at those factors that protect human beings from illness. After all, the majority of people facing stress do not become ill. In the absence of predisposing factors, such as hypertension, cigarette smoking, abnormal carbohydrate metabolism, high cholesterol, or a family history of heart disease, new cases of coronary heart disease rarely, if ever, occur in response to stress.[23] The same has been found with respect to a variety of mental illnesses. As Hudgens pointed out, "We should remember that most people do not become severely disabled psychiatrically when terrible things happen to them, and those who do become disabled regain their equilibrium in a reasonably short time."[24] Possible exceptions are rare and extreme forms of stress such as concentration camp experience.[25]

In his recent paper on the natural history of male psychologic health, George Vaillant has written, "Indeed, on the basis of this study and evidence of previous work, I have speculated that stress does not kill us so much as ingenious adaptation to stress (call it good mental health or mature coping mechanisms) facilitates our survival."[19]

Observations from the Italian immigrant village of Roseto, Pennsylvania, suggest that a stable social environment, with clearcut social and sexual roles, can go far in counteracting other factors leading to cardiovascular and mental illness.[23]

What then are those psychosocial factors that protect

individuals from disease? For the most part, evidence seems to support the ancient wisdom of moderaton and flexibility. Those individuals who are moderate in what they do, and who are able to bend with circumstances and evolve with change, are the ones least afflicted with disease and most blessed with longevity. Other factors contributing to a long and healthy life include high self-esteem, a capacity to remain detached and uninvolved in others' catastrophes, belonging to a stable family and social system, enjoying the respect and warm regard of others, possessing a positive outlook, having a variety of interests, and maintaining productive and useful work. Are these the source of good health or its product? Or are all the result of unknown and early genetic and infantile influences that shape the whole pattern of a person's life? Does A cause B, or are they both caused by C?

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Intravenous Angiography Utilizing Digital Video Subtraction

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Introduction

An x-ray imaging system is being developed capable of imaging major arteries after the intravenous injection of radiocontrast so that many angiographic procedues can be performed simply, and on an outpatient basis. The image acquisition system, which has been assembled, starts with a high quality x-ray image intensifier-video chain with which images are obtained. Images are immediately converted into a digital format via an A to D converter, and stored on a digital disc. Images before the appearance of the radiocontrast material are then subtracted from those obtained after so that the resultant image contains contrast only. The image is then electronically contrast enhanced and the final image of arterial structures is then viewed on a T.V. display.

Methods

The system is outlined in Figure 1 which shows the major components of the system that are assembled in the experimental laboratory.

The x-ray generator, tube, intensifier system is a standard, but high powered x-ray system. The video camera and tube is a very sensitive, high fidelity system that is coupled to an A-D converter so that the images are immediately digitized. This digitized information is then fed into the image processing system where it is stored, manipulated, and redisplayed. With digitization of the information any image can be subtracted from any other image and redisplayed on the DRT within one to two seconds, with both binary and logarithmic subtractions conventionally being performed.

For a clinical exam, a 16 gauge angiocath is placed in an antecubital vein. Renografin 76, 15-20cc per second for two to three seconds, is power injected. With the patient remaining motionless, x-ray images are obtained at a rate of one per second for 15-20 seconds. Images before contrast are then subtracted from images with contrast, and electronically enhanced to produce the final image.

Results

Initial studies produced excellent results in visualizing the carotid arteries, renal arteries, aorta, and the left ventricular function in dogs. Coronary arteries have

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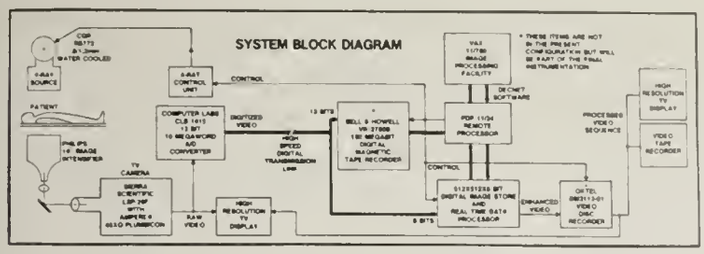


Figure 1

also been demonstrated in the dogs, although not in their entirety.

Progress has been achieved to the point where we are presently using intravenous angiography as the primary x-ray examination to study the extracranial carotid circulation in certain patients who are deemed to have an increased risk for carotid catheterization. These patients are older, many with significant heart disease. We have performed 12 such examinations to date, all with satisfactory results. Figure 2(a-c) shows an example of such a study in a patient with right internal carotid artery occlusion. We have also performed several renal studies, and Figure 3 illustrates the findings of left renal artery occlusion in a hypertensive patient. Subsequent arteriograms have been performed in one carotid patient and two renal patients, which confirmed the findings of the intravenous angiograms.

Discusssion

The success of intravenous angiography at this time depends on three factors:

1. It is imperative that the subject be motionless so that satisfactory subtraction can be performed. This requires alert, cooperative patients.

2 A sufficient bolus of contrast must be delivered so that the arterial structures can be visualized after the considerable physiologic dilution that occurs.

3. An x-ray system must be capable of delivering an x-ray dose of .5 to 1.0 millirads to the intensifier face to provide sufficient flux to discern these low contrast arterial images.

Results in animal experiments and now in patients indicate that these conditions can be met. Furthermore, we anticipate that future planned modifications in our electronic technique for acquiring images will minimize, if not eliminate motion problems, as well as increase resolution and contrast so that superior images will be obtained.

The impetus for developing such a system was to provide a means for detecting and quantifying atherosclerotic lesions in asymptomatic but high risk patients. At the present time it is very difficult to quantitate atherosclerotic lesions in the human arterial system unless 1) angiography is performed, or 2) the lesions are so severe that secondary effects occur: such as high blood pressure, angina, transient ischemic attacks, or (which happens too often), more serious sequellae such as stroke or myocardial infarction. It



a



b



c

Figure 2

Intravenous carotid angiogram performed to evaluate right carotid artery. a) LPO view of neck before contrast b) contrast in arterial structures c) subracted and contrast enhanced image demonstrating right internal carotid artery occlusion.



a



b



c

Figure 3

Intravenous renal angiogram performed to evaluate hypertension and small left kidney a) after contrast injection b) subraction image before contrast enhancement c) figure b after contrast enhancement demonstrating occlusion of left renal artery.

would be very desirable to identify significant atherosclerotic lesions before they cause symptoms so the appropriate prophylactic therapy can be instituted. Because direct angiography is an invasive procedure and does not require hospitalization, it is not a feasible method for identifying atherosclerotic lesions in the asymptomatic patient. The intravenous angiographic procedure has been developed, therefore, as a screening method to identify clinically important but latent disease and to follow patients serially to determine the effects of treatment on demonstrated atherosclerotic lesions. It has become evident that there will be many additional applications of this procedure including evaluation vascularity of mass lesions, screening for pulmonary embolism, evaluating left ventricular function, etc.

The advantages of intravenous angiography are that it can be performed on an outpatient basis requiring only a simple venous cannulation rather than the more difficult arterial catheter placement. It is also a faster procedure requiring one 15-30 minutes per exam and requires fewer personnel in comparison with an angiographic procedure. These features lend to a more rapid and potentially cheaper examination.

In view of the initial success, it is anticipated that intravenous angiography will become the primary exam for evaluating large vessel disease. This would include evaluating the aorta, caritids, renal and iliac arteries. It is also expected that left ventricular function in wall motion kinetics will be easily studied with this technique. This analysis will have to wait the incorporation of our high speed digital magnetic tape recorder (now in process) that will allow image acquisition rates of up to 60 fields per second. The ultimate goal is to visualize the coronary arteries in detail so that the presence or absence of coronary disease may be identified.

A dedicated clinical biplane room for intravenous angiography is now being assembled and is expected to be operational in April 1980. Beginning at this time, intravenous angiography will be performed on a routine basis.

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Use of Immunofluorescence and Electron Microscopy in the Diagnosis of Renal Disease

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Raymond B. Nagle, M.D.

In 1951, Iverson and Brun[1] reported the use of needle biopsy to obtain renal tissue for microscopic examination and introduced a radical new dimension into the evaluation of renal disease. But it remained for the subsequent application of immunofluorescence[2] and electron microscopy[3] to distinguish among similar light microscopic morphologic patterns and to provide insight into pathogenetic mechanisms. The purpose of this paper is to present the principal function of these specialized modalities in the diagnosis of renal disease in current practice.

Immunofluorescence is performed to demonstrate the presence of immunoglobulins, complement components and fibrin within renal tissue. The test is performed on frozen tissue and employs antibodies, produced in animals, to these proteins. The antibodies are labeled with a fluorochrome (generally fluorescein isothiocyanate) which fluoresces under ultraviolet light and permits localization by microscopic examination of the respective immunoglobulins, complement components and fibrin.

There are several major diagnostic settings of renal disease in which immunofluorescence is of prime importance (Table I). The first is in distinguishing early membranous glomerulopathy from minimal change disease, both of which may present as nephrotic syndrome and have normal appearing glomerular architecture by light microscopy. Minimal change disease, a principal cause of nephrotic syndrome in children, is characterized by a 90-98% response rate to steroid therapy,[4] whereas membranous glomerulopathy has a poorer prognosis and may or may not respond to steroids,[5] therefore their distinction is of major clinical importance. Minimal change disease has no significant immunoglobulin or complement deposition by immunofluorescence. Membranous glomerulopathy, however, is readily recognized by a distinctive pattern of small, closely-spaced, granular deposits containing IgG (and occasionally IgM or IgA) and C_3 along the glomerular basement membrane (Fig. 1).

Table 1
Differential Immunofluorescence Patterns of Various Renal Diseases

Disease	Immunofluorescence Findings
Minimal change disease	No significant immunoglobulin or complement deposition
Membranous glomerulopathy	Finely-granular, closely-spaced, subepithelial deposits or IgG (occasionally also IgA or IgM) and C_3
Berger's IgA-IgG nephropathy	Mesangial deposits of IgA and IgG (with variable amounts of C_3)
Acute glomerulonephritis	Coarsely-granular, irregularly-spaced subepithelial deposits of IgG (occasionally also IgA or IgM) and C_3
Membranoproliferative glomerulonephritis	Subendothelial interrupted deposits of C_3 (with varying amounts IgA, G, or M)
Goodpasture's syndrome	Linear deposits of IgG and C_3 along glomerular basement membrane



Figure 1
Finely-granular, closely-spaced deposits of IgG along glomerular basement membrane in membranous glomerulopathy (original magnification X350).

A group of glomerular diseases for which immunofluorescence is absolutely essential to diagnosis is that of focal glomerulonephritis, in which only some of the glomeruli show morphologic changes, generally proliferative in nature. Focal GN may be a feature of systemic lupus erythematosus,[6] vasculitides,[7] the early stages of Goodpasture's syndrome,[8] or of Berger's IgA-

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Figure 2
Deposits of IgA within glomerular mesangium (with sparing of peripheral capillary loops) in Berger's disease (original magnification X325).



Figure 3
Simplification of epithelial cell shape ("foot-process fusion") along glomerular basement membrane in minimal change disease (original magnification X6,000).

IgG nephropathy,[9] a generally benign disorder, frequently affecting young males, the clinical hallmark of which is recurrent gross or microscopic hematuria. As the above name suggests, the diagnosis of Berger's disease is based on the immunohistochemical demonstration of IgA and IgG in the glomerular mesangium, in a "pruned-tree" pattern of deposition (Fig. 2) which spares the glomerular capillary walls. This well-defined pattern involves all the glomeruli (although the light microscopic proliferative change is focal) and is readily distinguishable from the less regular immunofluorescence findings of SLE or the vasculitides and the striking linear capillary wall staining of anti-glomerular basement membrane antibody in Goodpasture's syndrome.

Finally, immunofluorescence provides insight into disease progression in such disorders as systemic lupus erythematosus, for which it has been shown that the amount and pattern of distribution of glomerular immunoglobulins detected by immunofluorescence correlate better than light microscopic morphology with serum levels of anti-DNA antibody and complement.[10]

The main functions of electron microscopy in renal biopsy evaluation are twofold: first, to facilitate identification and precise localization of immune complex deposits with respect to glomerular basement membrane and mesangium; and second, to characterize structures and substances which may be indistinguishable by conventional light microscopy (Table 2).

The group of diseases which require the first function are minimal change disease and early membranous glomerulopathy. Both these disorders may have apparently normal glomerular morphology by light microscopy. While these can be readily differentiated by immunofluorescence (as described above), in those

Table 2
Differential Electron Microscopic Findings of Various Renal Diseases Causing Nephrotic Syndrome

Disease	Electron Microscopic Findings
Minimal change disease	Simplification of visceral epithelial cell shape ("foot process fusion")
Membranous glomerulopathy	Finely-granular, closely-spaced sub-epithelial electron-dense deposits
Diabetes mellitus	Glomerular basement membrane thickening (often 1.5-2x greater than normal 4500 Å) - diffuse lesion
Amyloidosis	Deposition of amyloid fibrils in glomerular mesangium, basement membrane, blood vessels or interstitium

biopsies in which glomeruli may not be present on the portion submitted for immunofluorescence, electron microscopy alone can discriminate between these. Minimal change disease is recognized by the pattern of visceral epithelial cell shape simplification (so-called foot process fusion) in the absence of other ultrastructural abnormalities (Fig. 3). By contrast, early membranous glomerulopathy produces a uniform pattern of small, closely-spaced, electron-dense deposits along the epithelial aspect of the glomerular basement membrane (Fig. 4).

There are several renal diseases which may cause nephrotic syndrome in adults and which have characteristic structural or compositional features detectable by electron microscopy even in early phases. One of these is diabetes mellitus, in which a diffuse thickening of glomerular capillary basement membranes

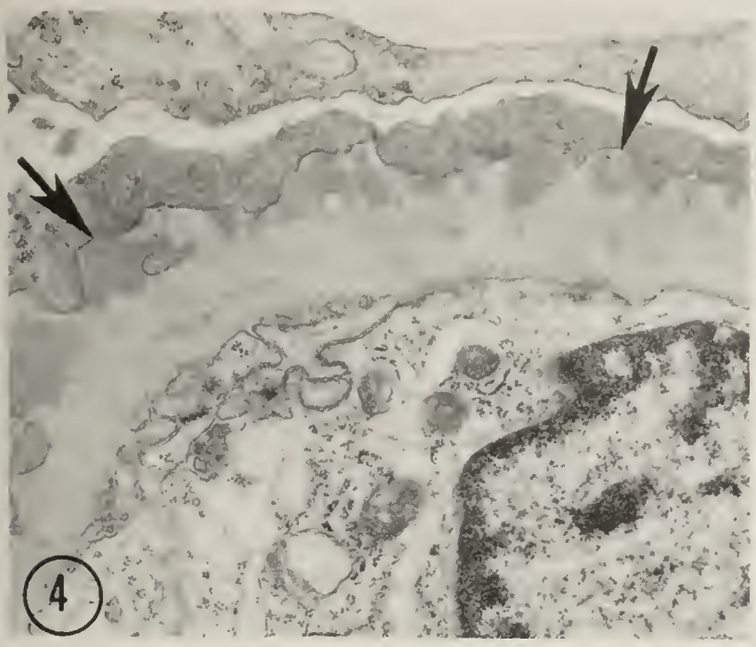


Figure 4
Small, closely-spaced electron-dense deposits (indicated by arrows) along subepithelial aspect of glomerular basement membrane in membranous glomerulopathy (original magnification X12,000).

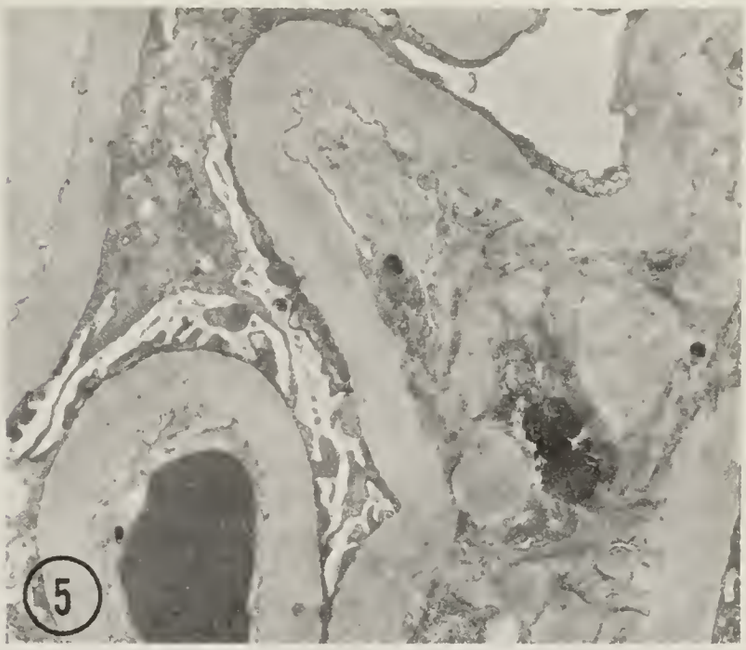


Figure 5
Diffuse thickening of the glomerular basement membrane in diabetes mellitus (original magnification X6,200).

may be demonstrated ultrastructurally (Fig. 5) before it becomes apparent by light microscopy.[11] We have recently observed such change in a patient whose only evidence of diabetes was an abnormal glucose tolerance test at two hours; similar findings in prediabetics have been previously reported.[12] A very important cause of renal dysfunction which may be detected early by electron microscopy is amyloidosis. The characteristic 100 A fibrils of amyloid may be detected in the glomerular mesangium and subendothelial aspects of basement membrane by electron microscopy (Fig. 6) before light microscopic glomerular change is evident.



Figure 6
Amyloid fibrils (indicated by arrows) along subendothelial aspect of glomerular basement membrane (original magnification X9,000).

Modern methods of immunofluorescence and electron microscopy have increased diagnostic precision in renal biopsy interpretation, with concomitant improvement in the specificity of therapy. This paper has briefly summarized some of the applications of these modalities to the differential diagnostic problems of renal disease.

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The Objectives and Functions of CME

Christine M. Haska

Continuing Medical Education is now a mandatory process in Arizona, as well as in over 20 other states. The state legislatures have passed laws developing requirements pertaining to CME which are then conditions for relicensure in order to practice medicine. Many other states are moving in this direction with varied degrees of state intervention in the number and nature of CME hours necessary.

The fundamental purpose of CME has not changed; CME is still a process through which physicians can continue their medical educations. The medical knowledge area has expanded and changed in the last twenty years and will certainly continue to do so. CME is then a method of facilitating the practicing physician to be able to maintain current familiarity with these changes and expansions. The mandatory nature of this method has resulted in great controversy over the concept of CME itself.

From: University of Arizona Health Sciences Center, Office of Continuing Medical Education and Outreach, 1501 N. Campbell Aveune, Tucson, AZ 85724.

The major argument put forth by mandatory CME proponents has been in the area of requiring physicians to continue medical education throughout their professional lives. This opinion reflects the premise that medical education should not be restricted to medical schools, but rather that it should be an ongoing responsibility of physicians. This is in large part responsive to the American public, since they have increased their awareness and expectation of the medical care field (Mechanic, 1972). The implication is that governmental policies in the future will be somehow influenced by the sensitivity of the medical delivery system to meet these increased expectations. (Mason et al, 1979).

The operationalization of mandatory CME is founded on the belief that CME will result in an improvement in health care in general and lowering of patient health costs. This relationship between CME and the desired effects has not been clearly defined and/or documented. Even more importantly, the relationship between mandatory CME and improved health care and lowered costs has not been established before or after implementation.

Certainly CME has been a desirable concept, as was proven by physicians themselves before the process became necessary for relicensure. Voluntary CME is ongoing in all states without requirements mandated by state legislatures. This is also true for mandatory CME states where the process was ongoing before the CME laws were enacted (Mangun, 1975).

The instructional methods which are offered through many CME offices (University of Arizona included) involve a variety of alternatives. The most common is the short course format, based on medical school didactic methods (Caplan, 1972). CME organizers are, however, exploring other opportunities for implementation of medical education. These courses are presented on schedules varying from the annual conference to the ongoing weekly course. Software packages are available as well, which involve homestudy programs approved for Category I, AMA credit. These are available from CME offices and usually involve the reading of an article prepared by experts in a specific subject area. A post-test is included for the reader to complete and return to the sponsoring CME institution. These tests are then corrected and returned to the physician with the answers and explanations to all of the tested material. The physician is also given an award of Category I, AMA credit if the exam was adequately passed (convention is a score of 70%).

Post-graduate training in the form of mini-residencies is also offered. A fee is paid to the sponsoring institution, and an individualized curriculum is coordinated for the physician. The participant spends time at the particular teaching hospital, with special emphasis on individual assessment of needs, for which AMA credit is also awarded.

Audits of clinical practice are available upon individual

request as well. A physician may desire an evaluation of his or her medical practice in order to more fully determine areas for continuing medical education. The CME office may be able to coordinate an audit effort which will either focus on particular areas of practice, or general assessment. The results are presented to the physician and may be applicable for credit, dependent on the nature and extent of the audit (Fifer, 1972).

The now popular videocassettes are becoming extremely useful for physicians. The video taped programs are approved for CME credit, and the physicians may complete CME requirements at their leisure, without necessitating conference attendance which may be problematic for many practitoners (House, 1974). Many of these videocassettes are available at medical school libraries, free of charge. Subscriptions to journal type cassette programs are also being developed to offer additional CME options. This format is much like the software packages described above. The individual views the program and answers predetermined questions upon completion of viewing. These answers are corrected by the CME office and returned with appropriate, earned credit granted.

Evaluation of CME has been required by the American Medical Association. The particular format of evaluation has not been specified formally, but the research instrument usually involves collection of data concerning the level of complexity of the information presented and/or the utility of subject matter for medical practice, and/or perceptions of increased understanding of the presented topic. (Individuals' comments are usually solicited as well.) At times pre- and post-testing is done in an attempt to measure actual learning thought to have taken place as a direct result of CME participation.

The first type of evaluation is usually referred to as a "happiness index." This is where the perceptions of the respondents are requested, with no data about actual learning (Naftalin et al, 1973). The data reflect attitudinal considerations of participants; such as, educational content, speakers, location, and timing, which are certainly pertinent and relevant in conference planning. The second type of assessment, the pre/post design, usually lacks a pre-testing procedure before the actual CME activity takes place. In other words, the pre-test given at the conference may in fact be too simple or complex and this would only be expressed after the results were tabulated. Pre-testing the examination instrument allows for a more precise measure of realistic prior knowledge of a given topic. The most salient argument offered in opposition to this process refers to testing as a measure of acquired knowledge. Educational research has shown that test-taking is a skill to a certain degree; of course, this procedure is an integral part of medical school education. Therefore, physicians are usually adept at test-taking, and this method will usually show learning has taken place. However, if the purpose of CME is to actually alter behavior, then the pre/post test technique is subject to reliability testing. It has been shown that material which is retained for the sake of testing will not be retained for extended periods of time (Mason et al, 1979). It also does not imply in any way that the material learned was applicable to medical practice or met CME needs for individual physicians. Both types of assessment procedures have inherent flaws which are easily recognized, and are important considerations in CME evaluation. An integration of both techniques, into the evaluation component of any CME activity, is a method which permits a more complete assessment of program effectiveness.

The issue remains however, of linking mandatory CME with desired effects of improved health care and lower health care costs. Evaluation of CME is then the crucial avenue of response to this debate (Abrahamson, 1968). The most efficient way of determining this kind of data is to establish physicians' needs prior to CME participation and to follow up after participation to determine whether those needs were met (Neu & Harvey, 1975). The subject becomes problematic when considering a prior needs assessment with post-conference effects. Registration for CME occurs only after curriculum for a give program is established, in fact it is assumed that the program content determines attendance to a large degree. The assessment of CME effectiveness after the conference can only be definitively measured by direct observation of the physician in clinical practice. Approximately six months after participation, the physician could be observed with a special focus on the program content to establish if the learned material had been incorporated into the medical practice. This is acknowledged as one of the finest measurement mechanisms but whose cost is prohibitive. Sending CME personnel to observe medical practices over the entire state would involve fiscal considerations which are beyond absorption by registration fees.

Continuing Medical Education, mandatory or not, should be viewed as a facilitating mechanism for the physician. The current mandatory nature of CME may be interpreted as a request for increased accountability of CME as an assistance measure for physicians. The causal relationship between CME and improved health care will continue to be investigated, but it is possible to narrow CME orientation at this point. If the function of CME is to provide opportunities for continuing education for physicians, and if this is thought to be causally associated with the quality of health care, then the primary focus of CME must be medical practice (Mayer et al, 1980). Physician input into educational programming is essential for the effectiveness of CME. This implies a coordination of effort on the part of individual physicians as well as the CME providers. Reviewing the definition of CME reveals underlying assumptions, central to its successful operationalization. The connection between education and actual behavioral change is critical in consideration of CME purposes and goals.

ArMA Reports

The minutes appearing in this section have been edited to conserve space. A complete copy of the minutes of any meeting will be mailed to any member requesting them.

LEGISLATIVE COMMITTEE

Meeting of the Legislative Committee of the Arizona Medical Association held February 28, 1980, at 810 West Bethany Home Road, Phoenix convened at 6:52 p.m., Edward Sattenspiel, M.D., Acting Chairman, presiding.

Definition of Terms

The definitions of terms used to establish the Committee's position on legislation were accepted as approved during meeting held December 8, 1979. *(See Arizona Medicine February 1980 pg. 104.)*

Legislative Review

S.B. 1067 - Poison and Drug Center; Poison Control System

Dr. Kunkel explained that S.B. 1067 would establish a poison and drug information center located at and affiliated with the University of Arizona with designated regional programs throughout the State. A posion and drug system would be established to provide comprehensive poison and drug information and management of the poisoned person. Dr. Kunkel explained the recommendation of the Professional Committee seeking support of this legislation.

It was moved and carried to give general support for S.B. 1067 - Poison and Drug Center; Poison Control System.

S.B. 1022 - Physicians and Surgeons; Removing CME Requirements

Mr. Barnett informed the Committee that S.B. 1022 which, if enacted, would remove continuing medical education requirements for physicians and surgeons failed to pass in the Senate Health, Welfare and Aging Committeee along with similar legislation for other allied health care practitioners. *Received for Information.*

S.B. 1098 - Department of Commerce

Mr. Boykin informed the Committee that S.B. 1098, if enacted would organize many state departments, boards, councils, commissions and committees into a single department for the "purposes of administrative efficiency and economy." The Board of Medical Examiners would be included under this act. There was discussion.

It was moved and carried to give active non-support to S.B. 1098 - Department of Commerce.

S.B. 1059 - Abolishing Special Funds of Certain Regulatory Agencies

Mr. Boykin informed the Committee that S.B. 1059 provides for abolishing special funds of certain regulatory agencies, including the Board of Medical Examiners. Monies collected by these agencies would be deposited in the general fund; the state treasurer would no longer transfer ninety percent of these monies to the agencies' special funds. This legislation could be the first step in setting up a "Department of Commerce."

It was moved and carried to give active non-support to S.B. 1059 - Abolishing Special Funds of Certain Regulatory Agencies.

H.B. 2138 - Health Professions and Occupations Commission

Mr. Boykin explained that H.B. 2138 would establish a bureaucracy similar to the proposed Department of Commerce, but limited to the health care professions. This legislation has been placed in a subcommittee.

It was moved and carried to give non-support to H.B. 2138 - Health Professions and Occupations Commission.

S.B. 1005 - Radiation Regulatory Commission; H.B. 2172 - Arizona Atomic Energy Commission

Dr. Magen reported that S.B. 1005 and H.B. 2172 would change the name of the Arizona Atomic Energy Commission to the Radiation Regulatory Commission and prescribe the powers and duties of the Commission. The bills are similar and the concept is supported by the Radiology Society. There is concern by the Radiologists of the composition of the Board. There was discussion.

It was moved and carried to give general support to S.B. 1005 - Radiation regulatory Commission and H.B. 2171 - Arizona Atomic Energy Commission if appropriately amended to provide for more board members with technical expertise.

S.B. 1066 - Chiropractic; Definiton

Gary Barnett reported that S.B. 1066 which would provide for an expanded definition of chiropractics failed in the Senate Health, Welfare and Aging Committee. This bill would possibly be attached to a related bill later in the session.

It was moved and carried to give active non-support to S.B. 1066 - Chiropractic; Definition.

S.B. 1064 - Clinical Laboratories Use; Medical Doctors; Chiropractors; Naturopaths; Osteopathic Physicians and Surgeons

Gary Barnett explained that S.B. 1064 which would allow chiropractors and naturopaths as well as medical doctors and osteopathic physicians and surgeons the use of clinical laboratories, has been held in the Senate Health, Welfare and Aging Committee. There was discussion.

It was moved and carried to give active non-support to S.B. 1064 - Clinical Laboratories use; Medical Doctors; Chiropractors; Naturopaths; Osteopathic Physicians and Surgeons.

S.B. 1167 - Licensing Qualifications of Physical Therapists

Dr. Pomeroy reported that a group of Physiatrists, Neurosurgeons and Orthopedic Surgeons have met with representatives of physical therapy and have worked out an amendment to clarify S.B. 1167. Dr. Linkner reported that the Health Manpwer Committee had determined to further amend the bill and believed the amendment would be agreeable to the physical therapists. There was discussion.

It was moved and carried to give general suppoort of S.B. 1167 - Licensing Qualifications of Physical Therapists when amended as agreed between the physicians and physical Therapists and as recommended by the Health Manpower Committe.

S.B. 1028 - Compulsory Pupil Immunization

Dr. Chisholm explained that S.B. 1028 would allow an unimmunized child to attend school if the parent gave consent. Considerable discussion ensued. *The Committee determined to take no action.*

S.B. 1057 - Community Mental Health Residential Treatment System.

Dr. Daehler explained that S.B. 1057, if enacted, would provide a statewide system of residential services and adequate treatment for the chronically mentally ill in the least restrictive alternative available and in accordance with the client's needs. It would shift the mental health responsibility to the state from the county level. There was discussion.

It was moved and carried to give general support to S.B. 1057 - Community Mental Health Residential Treatment System.

H.B. 2099 - DHS Contract with Licensed Dialysis Centers

Dr. Dandoy informed the Committee that H.B. 2099, which would allow the Department of Health Services to contract with licensed dialysis centers and the Board of Regents as well as with any Arizona hospital or home delivery health service, has passed the House of Representatives and is now in the Senate. There was discussion.

It was moved and carried to give general support to H.B. 2099 - DHS Contract with Licensed Dialysis

Centers.

S.B. 1060 - Health Care Institutions; Certificate of Need

It was explained to the Committee that S.B. 1060 is essentially the same Legislation that was vetoed by the Governor last session as pertains to certificate of need. It would raise the limit necessitating a certificate from $100,000 to $150,000.

It was moved and carried to give general support to S.B. 1060 - Health Care Institutions; Certificate of Need.

H.B. 2277 - Certificate of Need

The Committee was informed that H.B. 2277 is the new certificate of need bill supported by the Arizona Hospital Association. The intent of this bill is basically the same as S.B. 1060. There was discussion.

It was moved and carried to give general support to the concept of H.B. 2277 - Certificate of need.

S.B. 1027 - Abolishing Certificate of Need Program

The Commitee was informed that S.B. 1027 was introduced to abolish the certificate of need program. There was considerable discussion. *The Committee took no action.*

S.B. 1048 - Medicaid Repeal; H.B. 2400 - Program for Basic and Essential Health Services; H.B. 2307 - Medical Assistance to Needy; Health Screening for Elderly; S.B. 1247 - Medical Care for Indigents; H.B. 2352 - Indigents Medical Treatment

Dr. Schamadan discussed the intent of S.B. 1048, H.B. 2400, H.B. 2307, S.B. 1247 and H.B. 2352 relating to medical care for indigents in Arizona. It was felt that none of these bills have been refined as yet. There was considerable discussion.

It was moved and carried to actively study S.B. 1048 - Medicaid Repeal; H.B. 2400 - Program for Basic and Essential Health Services; H.B. 2307 - Medical Assistance to Needy; Health Screening for Elderly; S.B. 1247 - Medical Care for Indigents; and H.B. 2352 - Indigents Medical Treatment.

H.B. 2100 - Child Protection Act

Dr. Sattenspiel and Dr. Baker reported to the Committee on H.B. 2100 which would severely restrict physicians from performing abortions in Arizona. Considerable discussion ensued and the Committee *determined to take no action.*

H.C.R. 2016 - Right to Life; Constitutional Amendment

After considerable discussion the Committee determined to take no action on H.C.R. 2016 providing for a Constitutional amendment wherein every human being is deemed from the moment of conception to be a person and entitled to the right to life.

H.B. 2120 - Psychologist Insurance

Dr. Daehler explained that H.B. 2120 would mandate that insurance policies issued in Arizona provide the holder a choice between either a physician or a psychologist for the covered service. There appear to be dangerous and inappropriate gray zones in the legislation.

It was moved and carried to give active non-support to H. B. 2120 - Psychologist Insurance.

H.B. 2276 - Diability Insurance; Provisions of Policy

Mr. Barnett informed the Committee that H.B. 2276 speaks to time limitations and items in bold print in insurance policies. The Committee *determined to take no action.*

H.B. 2234 - Requiring Deductible for Health Insurance Policy

Mr. Barnett explained that H.B. 2234 would mandate a reasonable deductible for all disability insurance policies written in Arizona. This is consistent with the Association's cost containment position paper. There was considerable discussion.

It was moved and carried to actively study H.B. 2234 - Requiring Deductible for Health Insurance Policy.

H.B. 2055 - Insurance Coverage for Breast Reconstructive Surgery.

The Committee received input from the Arizona Health Plan and Blue Cross - Blue Shield on H.B. 2055 which would mandate insurance coverage for breast reconstructive surgery or internal or external prosthetic devices incident to a medically necessary mastectomy. The major concern was "mandatory" provision. There was considerable discussion.

It was moved and carried to give general support to H.B. 2055 - Insurance coverage for breast reconstructive surgery.

S.B. 1090 - Sales Tax Exemption for Medical Supplies

Mr. Barnett reported that S.B. 1090 would provide for exemption from sales tax the sale, rental or repair of medical equipment, supplies and prosthetic appliances. There was discussion.

It was moved and carried to give general support to S.B. 1090 - Sales Tax Exemption for Medical Supplies.

S.B. 1058 - Removing Certain Health Care Institutions from Rate Review and Accounting Requirments

Dr. Dandoy explained that S.B. 1058 is an attempt to remove some of the work load of the Department of Health Services by removing certain health care institutions from rate review and accounting requirements.

It was moved and carried to give general support to S.B. 1058 - Removing certain Health Care Institutions from Rate Review and Accounting Requirements.

H.B. 2181 - Hospitals; Accreditation Constitutes Qualification for Licensure

Dr. Dandoy explained that during the last regular session of the Legislature a law was passed allowing JCAH accreditation to serve as accreditation for the purposes of the Department of Health Services and that the Department would receive a copy of the institution's accreditation report. H. B. 2181 would alter the new law apparently restricing DHS from receiving this report. There was no one present from the Hospital Association to discuss the bill.

It was moved and carried to actively study H.B. 2181 - Hosptial; Accreditation Constitutes qualification for Licensure.

H.B. 2299 - Health Care Institutions; Violations; Criminal penalties

The Committee was informed that H.B. 2299 would hold the health care institution rather than the individual person in violation of certain laws relating the health care institutions and prescribe a criminal penalty if found guilty. There was discussion and the Committee *took no action.*

H.B. 2180 - Health Care Institutions; Violations; Civil Penalties

The Committee was informed that H.B. 2180 would prescribe civil penalties for licensed health care institutions rather than the individual person for violations of certain laws by licensed health care institutions which cause injury or material neglect to patients. There was discussion.

It was moved and carried to give non-support to H.B. 2180 - Health Care Institutions; Violations; Civil Penalties.

H.B. 2182 - Legislative Reivew of DHS Rules

Dr. Dandoy reported that H.B. 2182, if enacted, would give the Legislature the ability to review and approve rules of the Department of Health Services. While this legislation appears to go against the separation of powers, some agencies do abuse regulatory powers and this legislation may be appropriate.

It was moved and carried to give general support to H.B. 2182 - Legislative Review of DHS Rules.

S.B. 1055 - Psychologists Practice Act

Dr. Daehler informed the Committee that S.B. 1055 is an attempt to define and clarify the practice of psychology as well as provide for continuation of the State Board of Psychologist Examiners. There was discussion.

It was moved and carried to give general support to S.B. 1055 - Psychologists Practice Act.

H.B. 2273 Professional Nurse - Temporary Permit

Mr. Barnett explained that H.B. 2273 would extend to eighteen months the period for which a temporary nursing permit would be valid. This bill was requested by the nursing home

administrators to provide extended time for some foreign nurses.

It was moved and carried to give active non-support to H.B. 2273 - Professional Nurse - Temporary Permit.

H.B. 2370 - Nurse Practitioner; Scope of Practice

Dr. Linkner reported that H.B. 2370 was developed as a result of meetings between the Medical Association, the Nurses Association, the Nursing Board and legislators and provides for definition and scope of practice of a registered nurse practitioner. It was noted that where the bill states what the Joint Board may approve relating to rules and regulations should be changed to "shall" approve and the provision for supervision and direction should be changed to supervision "or" direction. It was further noted that this legislation is in keeping with the position paper developed by the Health Manpower Committee and approved by the Board of Directors

It was moved and carried to give active support to H.B. 2370 - Nurse Practitioners; Scope of Practice with the Following Amendments: Page 2, Line 40, Change May to Shall; Page 2, Line 40, Change And to Or.

H.B. 2371 - Certification and Practice of Registered Nurse Practitioner

Dr. Linkner informed the Committee that H.B. 2371 is the version of the nurse practitioner legislation that has in the past been unacceptable to the Arizona Medical Association.

It was moved and carried to give active non-support to H.B. 2371 - Certification and Practice of Registered Nurse Practitioner.

H.B. 2029 - Licensing Zone Therapists

Dr. Linkner reported that the Health Manpower Committee has reviewed H.B. 2029 providing for the licensing of zone therapists and recommends non-support. It appears that zone therapists currently represent no possible problem to the public health and therefore there is no necessity to legitimize them through licensure.

It was moved and carried to give active non-support to H.B. 2029 - Licensing Zone Therapists.

S.B. 1197 - Licensing and Regulation of Podiatrists

Dr. Linkner informed the Committee that S.B. 1197 is mostly a housekeeping measure relating to the Board of Podiatry Examiners and the licensure of podiatrists. This is not the legislation to mandate the inclusion of podiatrists on hosptial staffs, however it should be watched closely in the event that provision is amended to it.

It was moved and carried to actively study S.B. 1197 - Licensing and Regulation of Podiatrists.

S.B. 1220 - Homeopathic Physicians; Regulation and Licensing

Dr. Linkner reported that the Health Manpower Committee has reviewed S.B. 1220 which provides for qualifications, licensing and regulation of homeopathic physicians and has determined to take a position of non-support.

It was moved and carried to give active non-support to S.B. 1220 - Homeopathic Physicians; regulation and licensing.

S.B. 1238 - Marital and Family Therapists; Certification

Dr. Linkner reported tht the Health Manpower Committee reviewed S.B. 1238 providing for certification of marital and family therapists and finding them to be no public health problem determined to give non-support to this bill.

It was moved and carried to give non-support to S.B .1238 - Marital and Family Therapists; Certification.

S.B. 1332 - Naturopathic Physicians; Licensing and Regulation

Dr. Linkner reported that S.B. 1332, if enacted, would in essence legitimize the practice of naturopathy by referring to it as "naturopathic medicine" and establishing practitioners as "naturopathic physicians."

It was moved and carried to give active non-support to S.B. 1332 - Naturopathic Physicians; Licensing and Regulation.

H.B. 2392 - Licensing of Electrologists

Dr. Linkner reported that H.B. 2393 providing for the licensing of electrologists appears to be unsupportable in that electrologists currently are no threat to the public health.

It was moved and carried to give general non-support to H.B. 2393 - Licensing of Electrologists

S.B. 1015 - Board of Optometry

Dr. Dooley informed the Committee that the State Board of Optometry is scheduled to terminate this year and S.B. 1015 is the legislation to reinstate it. The bill contains extravagant terminology which provides, by inferrance, to the public that optometrists are doctors of the eye. It was noted that some form of S.B. 1015 will likely be passed to provide for continuation of the Board of Optometry.

It was moved and carried to give active non-support to a number of provisions in S.B. 1015 - Board of Optometry.

S.B. 1075 - Blood Tests for Pregnant Women; Sample at Delivery

The Commitee was informed that S.B. 1075 would provide that a pregnant woman who has not had a seriological test prior to delivery shall have a sample of blood from the umbilical cord taken at delivery for examination.

It was moved and carried to give general support to S.B. 1075 - Blood Tests for Pregnant Women; Sample at Delivery.

H.B. 2373 - DHS; Crippled Children's Services; Sickle Cell Anemia

Mr. Barnett reported that H.B. 2373 provides for the establishement in Crippled Children's Services Division of a program for care and treatment of children with sickle cell anemia.

It was moved and carried to give general support to H.B. 2373 - DHS; Crippled Children's Services; Sickle Cell Anemia.

S.B. 1056 - Statewide Cancer Registry

Mr. Barnett informed the Committee that S.B. 1056 would establish a central statewide cancer registry in Arizona to be located at the Department of Health Services in Phoenix. The bill prescribes the purposes and functions of the registry.

It was moved and carried to give general support to S.B. 1056 - Statewide Cancer Registry.

H.B. 2041 - Raw Milk and Products; Regulation

Mr. Barnett explained that H.B. 2041, if enacted, would allow raw milk and products to be sold through commercial milk distributors. There was discussion relative to problems this could cause to public health.

It was moved and carried to give active non-support to H.B. 2041 - Raw Milk and Products; Regulation.

H.B. 2193 - Eye Enucleation by Embalmers

Dr. Dooley and Dr. Miles explained that H.B. 2193 would premit certified embalmers to enucleate the eyes of a dead human body and that there appears to be no problems with this legislation.

It was moved and carried to give general support to H.B. 2193 - Eye Enucleation by Embalmers

H.B. 2275 - Hazardous Waste Sites

Mr. Barnett informed the Committee that H.B. 2275 provides for designation of a hazardous waste site by the Department of Health Services. It was noted that the legislation does not apply to hospitals' radioactive waste material. *The Committee took no action.*

H.B. 2020 - Marijuana For Therapeutic Use

Mr. Barnett informed the Committee that H.B. 2020, which provides for the use of marijuana for therapeutic and research programs, has been placed in a subcommittee by the House Health Committee. There was discussion.

It was moved and carried to actively study H.B. 2020 -Marijuana for Therapeutic Use.

H.B. 2336 - Termination or Use of Life Support Systems

Mr. Barnett explained that H.B. 2336 provides that health care institutions and physicians are not liable for an act or omission to terminate or use life support systems if a patient has

requested in writing that they not be used. There was discussion.

It was moved and carried to actively study H.B. 2336 - Termination or Use of Life Support Systems

H.B. 2080 - Mental Helath Commitments; Children

Dr. Daehler commented on H.B. 2080 which provides for evaluation, treatment and placement of mentally ill children. Dr. Daehler reported that the legislation is very cumbersome; it appears to put judges in the position of making clinical decisions; it appears to be an attempt to equate children and juvenile mental health problems with those of adults. There is a need for more study of this bill and for it to be better written.

It was moved and carried to give active non-support to H.B. 2080 - Mental Health Commitments; Children Unless Clearly Amended or Rewritten.

S.B. 1239 - Schedule II Controlled Substances; Prescription Procedures.

Mr. Barnett explaiend that S.B. 1239 is an attempt to get a handle on the abuse of schedule II controlled substances. The bill provides that prescription order blanks for schedule II controlled substances be printed on distinctive paper in triplicate and serially numbered. There was discussion.

It was moved and carried to give general support to S.B. 1239 - Schedule II Controlled Substances; Prescription Procedures.

S.B. 1263 - Mental Retardation Services Advisory Committee

It was reported that S.B. 1263 would establish within the Department of Economic Security a Local Mental Retardation Services Advisory committee to evaluate the need for local mental retardation services, assess the work of the department with regard to the development and utilization of local mental retardation services and evaluate the quality and effectiveness of existing local mental retardation services.

It was moved and carried to activley study S.B. 1263 - Mental Retardation Services Advisory Committee

S.B. 1283 - Assualt Victim Treatment

Mr. Barnett informed the Committee the S.B. 1283 would require emergency receiving facilities to have a physicians on duty to examine and treat persons with injuries which may have resulted from an assault or provide for transportation to another facility for such persons. There was considerable discussion.

It was moved and carried to give non-support to S.B. 1283 - Assault Victim Treatment.

H.B. 2242 - Insurance Coverage for Hemophiliacs

H.B. 2242, if enacted, would mandate that certain insurance policies include provisions of the diagnosis, evaluation and treatment of hemophilia. There was discussion.

It was moved and carried to give general support to H.B. 2242 - Insurance Coverage for Hemophiliacs.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona on Friday, March 7, 1980, a quorum being present, convened at 6:40 p.m., William E. Crisp, M.D., President and Chairman, presiding.

Arizona Department of Health Services

Crippled Children's Hospital

Dr. Dandoy updated her previous report on the status of the Crippled Children's Hospital by advising the committee that, in line with the Future's Committee's request that all alternatives be investigated, a solicitation had been made of numerous hospitals to determine if any would be interested in assuming responsibility for Crippled Children's Services, should the pediatricians fail to come up with a firm proposal in June following the study presently being conducted by them.

State Boarding Homes

Recent meetings held both in Phoenix and Tucson with various persons invovled in or concerned with health care delivered in state boarding homes had resulted in various issues and gaps being identified and Dr. Dandoy was in the process of determining roles relating to responsibilities in an effort to alleviate the problems which presently exist.

Arizona perinatal Program

Dr. Dandoy expressed to the committee that she felt the ArMA member physicians who recently appeared before the House Subcommittee on Appropriations on behalf of the Arizona Perinatal Program deserved recognition for their presentations; and, it was the concensus of the committee that ArMA should, in fact, convey such recognition to those physicians involved.

Asbestos Situation

Dr. Dandoy reported that the situation in Globe relating to the asbestos concern had practically been alleviated, in that all asbestos sites have now been covered, dirt is presently being placed on homeowners' sites, and it was planned that families would be able to return to their home by the end of March.

Rubella Regulation

In answer to the committee's inquiry about the new regulation on rubella immunization, Dr. Dandoy reported that the regulation would, based on a national concern regarding the disease, require immunization of health workers in facilities where there were a number of pregnant women.

Review of the Board of Director's Agenda for 3/8/80

The agenda for the Board of Directors' meeting on 3/8/80 was discussed, item by item, with additions and changes being made.

Correspondence

Letter from Harlan R. Knudson, Executive Director, Washingotn State Medical Association, dated 2/20/80 *Received.*

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held in Banquet Rooms Quad C & D of the Pointe of View Restaurant, 7677 N. 16th Street, Phoenix, Arizona, on Saturday, March 8, 1980, a quorum being present, convened at 10:02 a.m., William E. Crisp, M.D., President and Chairman, presiding.

Minute

The minutes of the meeting held January 5, 1980 were reviewed and

It was moved and carried that the minutes of the meeting of the Board of Directors held on January 5, 1980 be amended by revising on page 7 thereof the action of the Board relating to the recommendation of the Scientific Assembly Committee Regarding the 1982 Annual Meeting dates to read as follows:

"It was moved and carried to accept the recommendation of the Scientific Assembly Committee that the dates of the Annual Meeting of the Association in 1982 be changed to conform to the hotel 'Off-Season' in the Phoenix area."

It was moved and carried that the minutes of the meeting held January 5, 1980 be approved as amended.

Auxiliary Status Report

Mrs. John T. Clymer, President of the ArMA Auxiliary, updated the members regarding planned activities during the 1980 Annual Convention, the newest of which was "Introduction to Media Relations" workshops to be conducted by representatives of the Burroughs Wellcome Co., and would consist of role playing sessions before live cameras directed toward aiding physicians and their spouses in feeling comfortable in on-the-spot interviews, etc. Mrs. Clymer stated that pre-registration would be required and, in an effort to minimize cost, a $10,00 fee charged.

Mrs. Clymer discussed very generally meetings being attended by Auxiliary representatives, various projects being

carried on by the individual county society auxiliaries and the fact that a dues increase by the Auxiliary was being contemplated.

ArMPAC

BOMEX Vacancies

The Board received a copy of a letter dated 1/21/80 from BOMEX to Governor Bruce Babbitt regarding the expiration of the terms of two of its members — Anna Margaret Osborn and George Scharf, M.D.; however, the Board was also informed that Mrs. Osborn had, in fact, accepted reappointment and, therefore, there existed only one vacancy to be filled and in line with past practice of the Association, the members were asked to recommend individuals for the Governor's consideration. Following a discussion and no recommendations being forthcoming, it was determined that any recommendations subsequently submitted to the Association's office would be transmitted to Governor Babbitt.

Western Physicians Purchasing Association

The Board received for its review a letter from Associations' counsel, Edward Jacobson, Esq., dated 2/25/80 and Dr. Kahle, President of WPPA, being present, updated that opinion letter by stating that all expenses of the WPPA had been brought current, at which point he delivered to the Board a check in the sum of $500.00 representing a partical interest payment on funds previously loaned to the WPPA, advising that each state association had recieved a like check; and by stating that South Dakota was indicating a renewed interest in WPPA; Nebraska and Texas were considering joining and an uphill trend had begun, although member solicitation was still a major concern.

It was the consensus of the Board of Directors that, since the WPPA was at the moment financially stable and apparent new interest by other associations indicated, the Association would continue its relationship with WPPA by bringing the benefits of the WPPA to the attention of ArMA members.

Executive Committee

Ratification of Minutes

It was moved and carried to approve and ratify the minutes of the meetings of the Executive Committee held on January 4, 1980 and February 15, 1980.

Approval of Fifty Year Club Memberships

It was moved and carried approving the following memberships in the Association's Fifty Year Club: Francis W. Allinson, M.D., Lorenz Anderman, M.D., Emmanuel G. Barnet, M.D., Carlos C. Craig, M.D. Oscar W. Friske, M.D., Robert A. McCulley, M.D., Zenas B. Noon, M.D., Jacob Reichert, M.D., Hugh C. Thompson, M.D. and William P. Tucker, M.D.

Membership Classification Changes Approved

Maricopa County Medical Society

1. George Mertz, M.D. - Active to Service - Account Employment Change - Effective 1/1/80 - One Quarter Dues.
2. James P. Rigg, M.D. - Active over 70 to Assoicate -Account Retirement - Effective 1/1/80 - Dues Exempt.

Pima County Medical Society

1. Banks S. Baker, M.D. - Active over 70 to Associate Account Retirement - Effective 1/1/80 - Dues Exempt.
2. G. P. Schnabel, M.D. - Active Over 70 to Associate -Account Retirement - Effective 1/1/80 - Dues Exempt.
3. William M. Hindman, M.D. - Active to Associate -Account Retirement - Effective 1/1/80 - Dues Exempt.

Yavapai County Medical Society

1. Russell Anderson, M.D. - New Associate - Account Retired - Effective 1/1/80-Dues Exempt.

AMA Delegations

Report on AMA Interim Meeting

Report of Drs. Griffin and Egge on the Resident Physicians Section meeting at the AMA Interim Meeting. *Received*

Recommendations for AMA Councils and Committees

The Board reviewed and discussed the request from AMA for recommendations for appointments to its various Councils and Committees. No names were forthcoming, with the exception of William R. Myers, M.D., who had at one time indicated a desire to be considered for the Residency Review Committee in Internal Medicine and it was determined that he should be contacted to see if this interest continued. Additionally, since the deadline date for these recommendations is May 9, 1980, names submitted to ArMA would be forwarded to the AMA for consideration.

Joseph B. Goldberger Award

Acknowledgement of the AMA of ArMA's nomination of Glenn M. Friedman, M.D. for the Joseph B. Goldberger Award in Clinical Nurtrition date 1/18/80 *Received*

Scheen Award

Acknowledgement by the AMA of Pima County Medical Society's nomination of Herbert K. Abrams, M.D. for the Sheen Award dated 2/20/80 *Received.*

Additionally, Dr. Chisholm addressed the Board regarding Dr. Cloud's campaign for the office of President-Elect of the AMA and the present effort being made to contact, on a one-to-one basis, all AMA delegates and alternate delegates, seeking support for Dr. Cloud. Along this same line, Mrs. Clymer advised the members that Mrs. Howard Kimball had recently been nominated as National Vice President of the Auxiliary.

Ad Hoc Awards Committee

The Board received the recommendation of the Ad Hoc Awards Committee regarding the recipient of the 1980 A.H. Robins "Community Service Award," and

It was moved and carried to approve the recommendation of the Ad Hoc Awards Committee and to name Solomon Cutcher, M.D. as recipient of the 1980 A.H. Robins "Community Service Award," the presentation of which would be made during the 89th Annual Meeting of the Association.

Finance Committee

Certified Audit

Henry & Horne Certified Audit for the year ending 12/31/79 *Received.*

Financial Statement

Financial Statement for the period ending 1/31/80 *Received.*

The recommendations of the Finance Committee made during its meeting on February 9, 1980 were considered by the Board and following action taken.

Justification of Committee Budgets

It was moved and carried that all ArMA Committee Chairmen, unless excused by the Finance Committee, would appear before the Finance Committee in September or October of 1980 for the purpose of justifying their 1981 budget requests.

Scholarship Funds

It was moved and carried to refer back to the Finance Committee for further study and clarification its recommendation to the Board of Directors that it consider a repeal of the House of Delegates' resolution which limits the use of earned interest to scholarship grants.

Dues Structure

It was moved and carried to not accept the recommendation of the Finance Committee relative to the apportioning of individual ArMA dues based upon a member's average mean income.

1981 Budget Proposal

It was moved and carried to approve the recommendation of the Finance Committee for the 1981 budget and that the same be submitted in resolution form to the House of Delegates during the 1980 Annual Meeting of the Association.

Medical Economics Committee

The Board received recommendations of the Medical Economics Committee taken during meeting on February 21, 1980 and took the following action relating thereto.

ICA Fee Schedule Computation

It was moved and carried that the Arizona Medical Association encourage the Industrial Commission of Arizona to accept the usual and customary billed charge statistics available from

Medicare, adjusted for increases in the consumers price index, as the data base for establishing the commission's medical fee schedule.

1974 CRVS - CIA Fee Schedule

It was moved and carried that the Arizona Medical Association encourage the Industrial Commission of Arizona to establish its fee schedule utilizing the 1974 CRVS. Further, however, ArMA would encourage the Industrial Commission of Arizona to continue using the Relative Value Studies provided by the American Society of Anesthesiologists and the American College of Radiology for their respective fees.

Medical Education Committee

Letter from Louis J. Kettel, M.D. dated 2/7/80 re: U of A Admissions Process. *Received.*

Legislative Committee

Ratification of Minutes

It was moved and carried to approve and ratify the minutes of the meeting of the Legislative Committee held on February 28, 1980.

Professional Committee

The Board of Directors Reviewed recommendations of the Professional Committee made in meeting on January 15, 1980 and took the following action.

Determination of Death Legislation

It was moved and carried that the following resolution relating to statutory definition of death - American Medical Association Model Legislation be introduced by the Professional Committee to the Arizona Medical Association House of Delegates During its 1980 Annual Meeting:

"WHEREAS, Under currently accepted medical practice a person may be declared dead on the basis that he has suffered irreversible cessation of all functions of the entire brain, and

WHEREAS, The brain death concept is relatively recent and because it goes beyond the traditional cardio-respiratory standard of determining death, there is a climate of legal uncertainty existing in the State of Arizona which may not have explicitly recognized the brain death concept, and

WHEREAS, The common law definition of death in Arizona has been as follows: 'The cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of blood and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc. However, the Arizona Supreme Court in its recent decision. *State vs Fierro*, appears to have adopted the National Conference of Commissioners on Uniform State Laws *Uniform Brain Death Act* which provides that *'For legal and medical purposes, an individual with irreversible cessation of all functioning of the brain, including the brain stem, is dead. Determination of death under this act shall be made in accordance with reasonable medical standards.'*, and

WHEREAS, The *Uniform Brain Death Act* adopted by the National Conference of Commissioners on Uniform State Laws appears to be limited to the single standard that a person who has suffered irreversible cessation of all functioning of the brain is dead and does not include the traditional cardiorespiratory standard, and

WHEREAS, The American Medical Association model legislation is a comprehensive determination of death bill which provided *'An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, shall be considered dead. A determination of death shall be made in accordance with accepted medical standards.'*, and

WHEREAS The American Medical Association model legislation further provides for criminal and civil immunity for physicians who make a determination of death in accordance with accepted medical standards and for the personnel who carry out the instructions of the physician, therefore be it

RESOLVED That the Arizona Medical Association actively support legislation which would statutorily define death in Arizona as provided in the American Medical Association's model determination of death bill."

It was moved and carried that a copy of the act be attached to the resolution when submitted to the House of Delegates, so that all members would be fully informed when considering the same.

Auxiliary Program - "An Early Start to Good Health"

It was moved and carried that the Arizona Medical Association endorse the Arizona Medical Association Auxiliary Program, "An Early Start to Good Health."

Correspondence

Correspondence from Robert C. Briggs, M.D., Samuel C. Cissel, M.D., Raymond F. Graap, M.D. and Jerry W. Haggard, M.D., regarding unified membership. *Received.*

Letter of thanks from Charles E. Henderson, M.D. dated 1/16/80. *Received.*

Letter from Rose Marie Malone dated 2/14/80 regarding "Speaking Effectivley" program. *Received*

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

Arizona Chapter, American Cancer Society
Arizona Heart Institute
Arizona Medical Association
Arizona State Hospital, Phoenix
Walter O. Boswell Memorial Hospital
Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates, Phoenix
Maricopa County General Hospital, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
Phoenix Psychiatric Council
St. Joseph's Hospital & Medical Center, Phoenix
St. Lukes's Hospital & Medical Center, Phoenix
St.Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott
Yuma Regional Medical Center

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

MAY

Diagnosis and Management of Arthritis

May 15, Williams Air Force Base. Sponsor: USAF Manpwer & Personnel Center. Contact: Surgeon's Office, Williams Air Foce Base, Mesa, AZ. Approved for 1 hour of category 1 credit.

The Physiologic Basis for Interpretation of Chest Radiology

May 15, Phoenix Country Club, Phoenix, Arizona. Sponsor: Phoenix Radiology Society. Contact: Alex Newman, M.D., MCGH, 2610 E. Roosevelt, Phoenix, AZ. Approved for 1½ hours of category 1 credit.

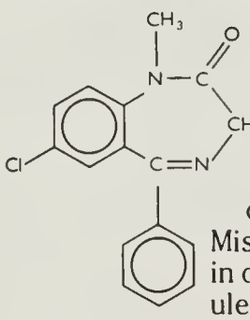
Cervical Cancer

May 20, Arizona Health Sciences Auditorium, U of A, Tucson, AZ. Sponsor: College of Medicine, U of A. Contact: CME office, U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 hour of category 1 credit.

Aspects of Management

What to tell your patients when you prescribe Valium® (diazepam/Roche)

Survey shows significant correlation between comprehension and compliance



A study of compliance patterns reveals that more than 6 out of 10 patients made errors in self-administration of prescribed medication, largely due to lack of comprehension.* Misunderstanding of directions resulted in discrepancies in dosage schedules as well as in length of therapy. Since evidence suggests that expanded verbal instructions may encourage compliance, the patient receiving Valium can benefit from your explanation of the dosage regimen, what response to expect from therapy and when to expect it.

What Valium (diazepam/Roche) can do

Your patients should know that 1) you are prescribing Valium as an adjunct to an overall program for the treatment of anxiety, and 2) Valium is given to relieve the symptoms of excessive anxiety and psychic tension while you help the patient to explore and deal with the underlying cause of his psychic tension.

Patients often interpret manifestations of anxiety, such as palpitations, hyperventilation, fatigue and muscle tension, as symptoms of a serious disease. However, when they learn that these symptoms can be relieved by Valium therapy, patients can more readily understand the psychosomatic origin of their symptoms and to accept the nonpharmacologic measures you may recommend.

The time you devote to these explanations can be a therapeutic measure in itself. Most anxious patients respond to and benefit from a frank discussion with an objective, sympathetic professional.

At the start of treatment, establishing therapeutic goals helps the patient to learn *what* to expect and *when* to expect it. Patients should also be informed that the medication will be gradually reduced and discontinued upon attainment of the therapeutic goal.

Tapering of dosage is rarely necessary in short-term therapy, but when consistently higher doses are used for extended periods, patients should know that the gradual reduction of medication will be implemented in order to avoid sudden recurrence of symptoms or possible withdrawal symptoms. Such recurrence is unlikely when the causes of the anxiety have been worked out satisfactorily within your overall treatment program.



What Valium (diazepam/Roche) can't do

It should be emphasized that there is no "magic" in any antianxiety tablet; that medication is not prescribed as a problem solver. Instead, Valium is being prescribed *as a temporary measure to relieve symptoms* generated by excessive anxiety and psychic tension.

* Boyd JR, *et al*: *Am J Hosp Pharm 31*: 485-491, May 1974

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety associated with anxiety disorders, transient situational disturbances and functional or organic disorders, psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms, or agitation, symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis, stiff-man syndrome; convulsive disorders (not for sole therapy).
The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics,



Practical pointers on taking antianxiety medications

do's Patients should be instructed to keep to their dosage schedule exactly as prescribed. If they miss a dose, they should not try to make it up by taking two doses the next time. Ask them to contact you promptly if they experience worrisome side effects.

Explain that drowsiness is a common reaction to almost all calming agents, but that it usually subsides in a few days. Urge the patient to contact you for a possible dosage adjustment if drowsiness or other reactions persist.

Just as you request a complete list of all medications the patient is taking, suggest that this list be given to any other physician treating her/him.

Like all medicines, Valium should be kept out of reach of children and young people. Old or unused medication should be discarded.

and don'ts Since drowsiness is an occasional problem, patients should be advised against driving or operating hazardous machinery until they see how the medication affects them. They should also know that tranquilizers increase the effects of alcoholic beverages, which should therefore be avoided. Also, warn patients against simultaneous use of drugs that depress the central nervous system, particularly sedative hypnotics.

Patients should be aware of the importance of not sharing their medications with friends and neighbors; they should know that what you have prescribed for them may be contraindicated for others.

2-mg, 5-mg, 10-mg scored tablets

Valium® (IV)
diazepam/Roche

An important adjunct to your treatment program for excessive psychic tension

barbiturates, MAO inhibitors and other antidepressants may potentiate its action Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies Observe usual precautions in impaired renal or hepatic function Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy

Dosage: Individualize for maximum beneficial effect *Adults* Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated (See Precautions.) *Children* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months)

Supplied: Valium® (diazepam/Roche) Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50, available in trays of 10

ROCHE®

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

Male Sexuality - Current Issues
May 24, Memorial Hospital, Phoenix, AZ. Sponsor: Memorial Hospital, Contact: Office of CME Memorial Hospital of Phoenix, 1201 S. 7th St., Phoenix, AZ 85036. Approved for 3 hours of category 1 credit.

Cardiomyopathies
May 28, Maryvale Samaritan Hospital. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Sam, 1033 E. McDowell Road, Pheonix, AZ 85006. approved for 1½ hours of category 1 credit.

ACP Course, MKSAP Session III
May 30-31, Arizona Health Sciences Center, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of CME & Outreach, AHSC, Tucson, AZ 85724. Approved for 12 hours of category 1 credit.

JUNE

Interim Scientific Meeting
June 7-8, Pinetop Lakes Resort, Pinetop, AZ, Sponsor: American Academy of Family Physicians. Contact: Lee Mahoney, 8534 E. Amelia, Scottsdale, AZ 85251. Approved for 9 hours of category 1 credit.

Hypertension
June 11, Maryvale Samaritan Hospital. Sponsor: Good Samaritan Hospital. Contact: Office of CME, Good Samaritan Hospital 1033 E. McDowell Rd., Phoenix, AZ 85006. approved for 1½ hours of category credit.

Arizona Perinatal Medicine Program
June 13-14, Prescott, Arizona, Sponsor: Arizona Perinatal Program and ArMA. Contact: Arizona Perinatal Program, 810 W. Bethany Home Rd., Phoenix, AZ 85013. Approved for 15 hours of category 1 credit.

Summer Pediatric Conference
June 13-15, Poco Diablo, Sedona, AZ. Sponsor: U of A College of Medicine & Arizona Pediatric Society. Contact: Office of CME UHSC, Tucson, AZ 85724. Approved for 14 hours of category 1 credit.

Non-Hodgkin's Lymphoma
June 17, U of A Health Sciences Center Auditorium, Tucson, AZ. Sponsor: College of Medicine, U of A, Tucson. Contact: CME office U of A Health Sciences Center, Tucson, AZ 85724. Approved for 1 hour of category 1 credit.

JULY

Coconino County Medical Society Summer Medical Seminar
July 26-27. Little America Motor Inn, Flagstaff, AZ. Sponsor: Arizona Medical Association and Coconino County Medical Society. Contact: Thomas DaVee, M.D., 710 N. Beaver, Flagstaff, AZ 86001. Approved for 8 hours of category 1 credit.

AUGUST

Symposia de Santa Fe
August 21-23. Santa Fe Hilton, Santa Fe, New Mexico. Sponsor: Symposia de Santa Fe. Contact: W. J. Levy, M.D., Sec.-Treasurer, P.O. Box 5175, Coronado Station, Santa Fe, New Mexico 87502.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.

Clinical Conference Cardiovascular Medicine
Third Tues.,5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.

A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff

Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.

Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists

Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.

Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.

Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.

Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Tunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.

Tumor Board
last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.

Surgical Department CME
4th Friday, 7 A.M., Educ. Center Classrooms I & II.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.

Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.

OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.

Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucson, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.

Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.

Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.

Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm

Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.

Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.

Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.

Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North

Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.

Pediatric Grand Rounds
3rd. Tuesday, 7:30-8:30 A.M., Contact: Paul Bergeson, M.D.

Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.

Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.

Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.

Dr. Fenger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.

Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.

OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.

PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.

Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.

GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.

Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora

Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.

Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology

Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.

Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.

Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.

Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.

Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.

PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL,(THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.

Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.

Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman

Ophthalmology Conference
1st Monday, 12:30 P.M., Contact: Bruce Gillers, M.D.

Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.

Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.

Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.

Clinical Pharmacology Conference
5th Tuesday, 12:30 P.M., Contact: M. Katz, Clinical Pharm.

12Neurology Conference
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.

Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.

Medical Surgical Grand Rounds
2nd Wed., 12:30 P.M., Contact: Chief Medical Resident

Medical Conference
1st Wed, 12:30 P.M., Contact: Chief Medical Resident

Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.

Endocrine Conference
2nd Thursday, 12:30 P.M., Contact E. Munjack, M.D.

GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.

Mortality & Morbidity Conference
3rd. Thursday, 12:30 P.M., Contact: E. Munjack, M.D.

OB/GYN Dept. Meeting
2nd Thursday, 2 P.M., Contact J. Wurzel, M.D.

OB/GYN Pathology Conference
Weekly,Thursday, except 2nd, Contact: J Wurzel, M.D.

OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel, M.D.

Clinical Pathology
5th Thursday, 12:30 P.M., Contact: J. Fleishman, M.D.

Renal Conference
1st Friday, 12:30 P.M., Contact: T. Pence, M.D.

Hematology Conference
2nd & 4th Friday, Contact: S. Ketchel, M.D.

Rheumatology Conference
3rd Friday, 12:30 P.M., Cntact J. Goldberger, M.D.

Chest Conference
5th Friday, 12:30 P.M., Contct: D. Engelsberg, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008

Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.

Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.

Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.

Hepatology Conference
2nd Tuesday, 1:00 P.M., Contact: Walt Koppenbrink, M.D.

OB/GYN Dept. Grand Rounds
Weekly Tuesday, 12 Noon, Santa Cruz Room

Obstetrical Problem Conference
Weekly Tuesday, 7:15 A.M., Yavapai Rm.

Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.

Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.,Contact: Robert Ganelin, M.D.

Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42

Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.

Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.

OB/Neonatology Seminar
Weekly, Wed. 7:15 A.M., Yavapai Rm.

Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.

Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.

Cardiology Conference
Weekly Thurs., 2 P.M., Santa Cruz Rm.

OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.

GYN Endocrine Seminar
1st & 3rd Friday, 12:30 P.M., Sanata Cruz Rm.

OB/GYN Surgical Pathology Conf.
Weekly Friday, 7 A.M., Yavapai Rm.

Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.

Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon

OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.

Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.

Clinical Staff Teaching Conference, Rm. A.
Wed. Weekly, 8:00 A.M.

Family Practice/Emergency Room Teaching Conference
Thursday Weekly, 7:30-8:30 A.M., Conf. Rm. A, Contact: Drs. L. Moher & L. Fairbanks.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.

Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.

Clinical Conferences
Weekly Tuesday, 12 Noon, Kiva Conference Room

Tumor Board Conference
Weekly Friday, 12 P.M., Kiva Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for category 1 credit.

Family Practice Conference
1st Monday, 12:30 P.M., Doctors' Lounge

Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge

Neurology & Neurosurgery Conference
3rd Monday, 12:30 P.M., Doctors' Lounge

Internal Medicine-Clinical Pathological Conference
4th Monday, 12:30 P.M., Doctors' Lounge

Pulmonary Medicine Conference
1st Tuesday, 12:30 P.M., Doctors' Lounge

Cardiology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge

Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge

Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge

Cardiolpulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge

OB/GYN Dept. Meeting & Conf.
2nd Wed., 12:30 P.M., Doctors' Lounge

Trauma Conference
3rd Thurs, 12:30 P.M., Doctors' Lounge

Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge

Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge

GI Medical—Surgical Rdiological Conf.
2nd Friday, 12:30 P.M., Doctors' Lounge

Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.

OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 P.M., 1st Floor Conf. Rm.

Genetics Conference
Weekly Monday, 12:30 P.M., Pediatric Department

Pediatric Rounds
Weekly Monday, Wed., & Friday, 10:30 A.M., Pediatric Department

Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 A.M., Contact: J. Kipp Charlton, M.D.

ECG. Conference
Weekly Tuesday, 12:30 P.M., Pediatric Department

Medical Grand Rounds
Weekly Wednesday, 8 A.M., 1st Floor Conf. Room

Visiting Professor Formal Presentation
Weekly Thursday, 8 A.M., PIMC

Visiting Professor Informal Rounds
Weekly Thursday, 9:30 A.M., 1st Floor Conf. Room

Visiting Professor Formal Presentation
Weekly Thursday, 12:30 P.M., PIMC.

Nephrology Conference
Weekly Friday, 12:30 P.M., Pediatric Department

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Family Practice Department Meeting
3rd Tuesday, 12 P.M., Contact Wm. Moteforte

Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 P.M., Contact: Kim Sowards.

Current Concepts in Medicine
Weekly Tuesday, 12 P.M., Auditorium.

Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 P.M., Contact: S. Salmon, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.

Cardiac Conference
Weekly Monday, 12:15 P.M., Auditorium

Surgery Conference
1st Tuesday, 12:15 P.M., Auditorium

Emergency Medicine Conference
1st Wednesday, 12:15 P.M., Auditorium

Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 P.M., Auditorium

Psychiatry Conference
3rd Thursday, 7 A.M., Auditorium

Combined Medical-General Practice Conference
1st Friday, 12:15 P.M., Auditorium

Toxicology Grand Rounds, Auditorium
1st Friday, 7:30 A.M., Auditorium

Ophthalmology Conference
1st Saturday, 8:30 A.M., Auditorium.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.

Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday

Emergency Medicine Lectures
Weekly Thursday, 8 A.M., Century Room A

Mental Health Update
1st Friday, 11:30-1:00 P.M., Century Room A

Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly Monday, except last, 12 Noon, Contact: J. Fernadez, M.D.

Dermatology Conference
4th Monday, 5:15 P.M., Contact: R. Friedman, M.D.

Endocrinology Conference
Last Monday, 12 P.M., Contact M. Parker, M.D. **Perinatal Conference**
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.

Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.

Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact: L. Mann, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.

Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.

Family Practice Meeting
2nd Wednesday, 12:30 P.M., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.

Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.

Gynecologic-Oncology Disposition Conf.
Weekly, Thursday, 8:30 A.M., Contact: E. A. Surwit, M.D.

Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.

Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.

Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.

Tumor Conference
Weekly Thursday, 12 Noon.

G—i Conference
Weekly Friday, 12 Noon, Contact: C. Krone, M.D.

Interhospital Nuclear Medicine Conference
Weekly Friday, 7:15 A.M., Contact: S.V. Hilts, M.D.

OBGYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.

OBGYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heibrumn, M.D. Approved for Category 1 credit.

GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.

Medical/Surgical GI Conference
1st & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.

Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Monday, 4 P.M., RM. 3134, Contact: Dr. Mertz, Ext 493.

GI Pathology Conf.
2nd & 4th Monday, 1 P.M., Path Conf. Rm, Contact: Dr. Partyka

Vascular Conference
2nd Monday, 3 P.M., Room 3134, Dr. Cintora, Ext 419

Surgery/Pathology Conference & Tissue Review
1st & 3rd Tuesday, 4 P.M., Room 2128, Contact: Dr. Likos & Mertz.

Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., Room 3134, Contact: Dr. G. Mertz.

GI Grand Rounds
Weekly Tuesday, 1 P.M., Contact: Drs. Sanowski, Kozarek & Partyka

GI Rounds
Weekly, 2 P.M., Contact: Dr. Burdick, harlan & Mitchell.

Dermatology Conference
1st, 2nd & 3rd Wed., 10 A.M. - C118, Contact: Dr. Roberts, Ext. 426.

Cancer Symposium
Weekly Wed., 1 P.M., T-5, Contact: Dr. Byrne, Ext. 426.

Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wednesday,4 P.M., Rm 3134. Contact: Dr. Mertz, Ext. 493.

GI Clinic
2nd and 4th, 1 to 4 P.M., D-442.

Medical Surgical Chest Conference
1st & 3rd Thursday, Contact: Dr. Rohwedder or Dr. Gill.

Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5.

Consultant Rounds
3rd Friday, 8 A.M., Contact: Dr. Severino.

Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller

GI Resident Conference
Weekly 1 P.M., Room D-446.

Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.

PRESCOTT VETERANS ADMINISTRATION HOSPTIAL MEDICAL CENTER

Prescott, Arizona 86313. Contacts listed below. Approved for category 1 credit.

Medical Lectures
Weekly Thursday & Friday, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.

GI Rounds
Third Thursday, 10 A.M.-2:30 P.M., Contact: J. W. Fitzharris, D.O.

Medical Rounds
First & seond Thursday, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.

TUCSON VETERANS ADMINISTRATION HOSPITAL & MEDICAL CENTER (U of A Tucson)

3601 South Sixty Ave., Tucson, AZ 85723. Contacts listed below. Approved for category 1 credit.

Medical Surgical Chest Conference
Weekly Tuesday, 2 P.M., Contact: Dr. Young

Medical Grand Rounds
Weekly Wed., 12-1:00 P.M., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.

Surgical Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. Putnam

Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 P.M., Rm. N318, Contact: Dept. of Internal Medicine.

Grand Rounds
Weekly, Thursday, 11 A.M., Bldg. 107, Contact J. Fitzharris, D.O.

Vascular Radiology, Interesting Case Conf.
Weekly Thursday, 12:00 Noon.

Neurology Grand Rounds
Weekly Friday, 12 P.M., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:Alan Winfield, M.D. Approved for category 1 credit.

Radiology Conference
1st Tuesday, 7:00 A.M.

Operation Outreach
2nd Tuesday, 6:30 P.M.

Pathology Conference
4th Tuesday, 7:00 A.M.

Operation Outreach
2nd Wednesday, 7:00 A.M.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403

Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 P.M., HSC Auditorium, Contact: Cancer Center

Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.

Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez

Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn

Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.

Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch

Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson

GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus

GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter

Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Room 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn

Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern

Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.

Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.

Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.

Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford

Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room

Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross

Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross

Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann

Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley
Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs
Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.
Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.
Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson
Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones
Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.
Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.
Psychiatric Grand Rounds
3rd, 4th & 5th Wed., 4-5 P.M., AHSC, Rm. 8403
Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital

Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.
Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.
Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson
Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655
Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich
Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.
Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C. **Uroradiology (Genitourinary Radiology)**
2nd & 4th Mondays, 7:30- 8:30 A.M., AHSC, Contact: Dept. of Radiology
Renal Pathology Conference
1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.

Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Rm.
Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.
Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.
Trauma Conference
Every Thursday,4-5 p.m. UAHSC, Rm. 5505.
Ward Grand Rounds - Trauma
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Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

Out of Context

John W. Kennedy, M.D.

Blue Ribbon Committee

The American Hospital Association appointed a blue ribbon committee to study hospital regulation and they are said to have reported that "Health Planning Agencies should be given power to enforce their decisions, even when withdrawing certification for excess facilities or services." And for five dollars you can have the entire report called Hospital Regulations by the American Hospital Association, Catalog #1835, I am sure they will receive a lot of orders. *Journal Legal Medicine. Vol. V #9, Sept. 1977, P. 38.*

* * * * * * * * * *

Visitation Rights

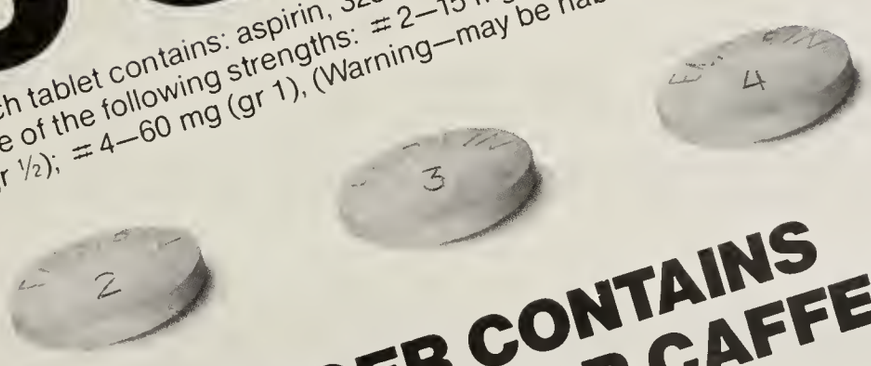
Well what is so new about these rights? A sperm donor has won a visitation right. It appears that a sperm donor, a man who donated his sperm for artificial insemination after agreeing to have no further interest in the resulting child, had second thoughts. So the bereft father donor sought and secured visitation rights to visit his illegitimate son! After all the judge noted that the donor was only seeking visitation and not custody of the child. The ways of our legal system, "passeth all understanding." *Journal Legal Medicine. Sept. 1977.*

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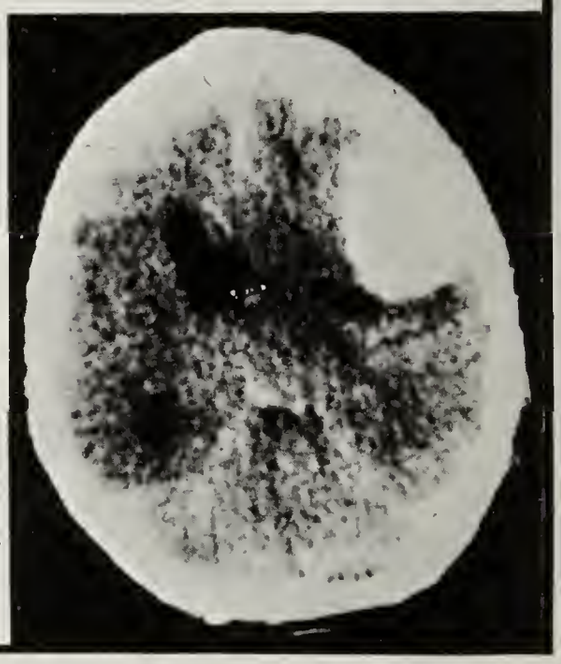
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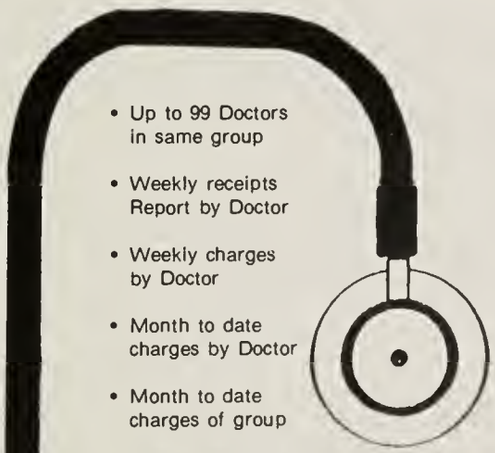
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INDEX TO ADVERTISERS

The American Medical Assoc. 318

AMA Alliance for Health 346

The Anesthesia Office, Inc. 376

Arizona Laminating 320

Burroughs Wellcome
Zyloprim 346
Empirin with Codeine Camelback Hospital 316

Classified Ads 380, 381

Computed Neuorological Scanning Center 320

Computed Tomography 376

Comt-U-Med 321

Data Management Systems Corp. 379

Doctors Central Directory 380

Eli Lilly & Co.
CeClor 325

HBA Life Insurance 319

Health Agencies of the West 315

House of Mailings 380

Janssen Pharmaceuticals
Monistat IV 312, 313, 314

Kiva Professional Plaza 380

Medical Bookstore 320

Mica Insurance Co. 378

Mullen Medical Service 380

Pfizer Laboratories
Sinequan 322, 323, 324

Roche Labs
Librium Second Cover, 309, 310
Librax 317
Valium 368, 369
Bactrium Third Cover, Fourth Cover

Roswell Bookbinding 310

William H. Rorer
Perdiem 344, 345, 346

Smith Kline & French
Tagament 343

Danny T. Sievert
Insurance 380

St. Luke's Hospital 379

Western Physicians Purchasing Assoc. 377

Western X-Ray Systems, Inc. 311

ARIZONA MEDICINE

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(ISSN 0004-1556) MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

SEMINARS IN CONTINUING EDUCATION

CHEST MEDICINE
Chronic Aspiration Pneumonitis 400
Jeffrey S. Wagener, M.D., et al

DERMATOLOGY
Angiolipoma
Presenting as a Breast Mass 403
Jay S. Fleishman, M.D., et al

ENDOCRINOLOGY & METABOLISM
Solitary Thyroid Nodule
Newer Techniques for Differentiating
Malignant from Non-malignant Lesions 404
Daniel S. Duick, M.D., et al

INFECTIOUS DISEASE
Antibiotic Chemotherapy of
CNS Infections 411
Enrique L. Labadie, M.D., et al

OBSTETRICS AND GYNECOLOGY
Meconium Staining 415
G. Wayne Figgs, M.D., et al

ONCOLOGY
Adriamycin Heart Disease: An Update 416
Bruce W. Dana, M.D.

OPHTHALMOLOGY
Glaucoma 418
Robert Rubenzik, M.D.

PSYCHIATRIC DISORDERS
Biofeedback Relaxation Therapy:
What is it? Who Does it Help?..... 421
Muriel Sieh, M.S.W.

RADIOLOGY
Case Of the Month No. 42
Right Upper Quadrant Mass:

SPECIAL ARTICLE

Pedalcycle Traffic Accidents
in Tucson, Arizona 425
Michael J. Halek, M.S., et al

STATE OF THE ART

Host Defense Mechanisms in
Diabetes Mellitus 428
Stanton G. Axline, M.D.

EDITORIALS

Health and Patient Education at the
Arizona Health Sciences Center 431
Laura L. Chenet, MPH, et al

Guest Editorial
An Unhappy Fairy Tale 432
Richard L. Reece, M.D.

ARMA REPORTS 439

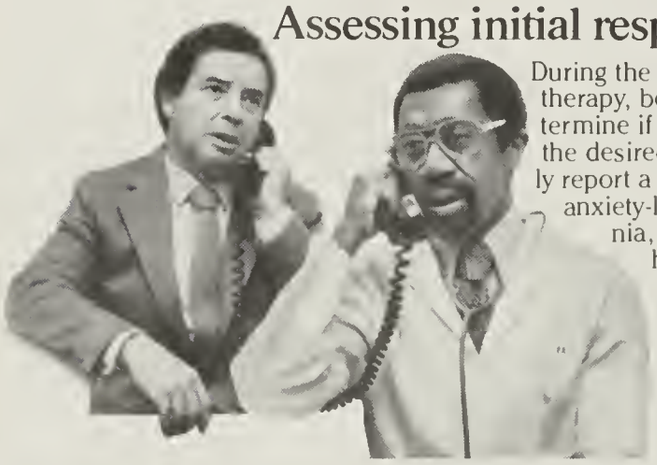
FUTURE MEETINGS 441

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Monitoring patient response to Valium® (diazepam/Roche)

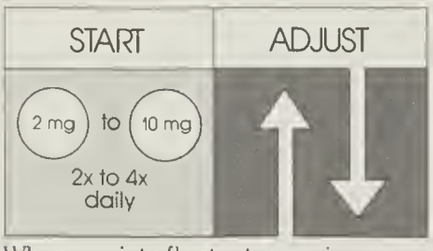


Assessing initial response to therapy

During the first follow-up visit after initiating therapy, both physician and patient should determine if Valium (diazepam/Roche) is having the desired effect. Most patients will promptly report a feeling of relaxation and relief of anxiety-linked symptoms such as insomnia, headaches, palpitations and hyperventilation. You will probably observe that the patient is calmer and more relaxed. If, however, patient response does not measure up to expectations, a reevaluation of the patient's profile with modification of the dosage regimen should be considered.



Making dosage adjustments



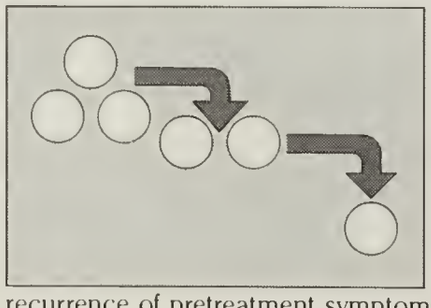
With any psychoactive medication it is good medical practice to initiate therapy at base dosage levels and titrate to the patient's needs. With Valium, experience has shown that 5 mg t.i.d. is usually sufficient although some patients with severe or persistent anxiety may require higher dosages initially. In geriatric or debilitated patients, the recommended dosage is 2 to 2½ mg once or twice daily. When anxiety fluctuates, as is common with most patients, the dosage may be adjusted as needed during the course of therapy; three strengths in scored tablets give you unmatched flexibility and simplicity in individualizing dosage.

Evaluating progress toward therapeutic goals

SET GOALS						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

At the beginning of therapy it is now common practice for both physician and patient to establish treatment goals and to estimate the amount of time needed to achieve them. Then the patient knows what to expect and when to expect it. Some physicians find that compiling a checklist of presenting symptoms and complaints is useful for assessing the patient's response from visit to visit. In this way, progress toward attainment of the therapeutic goal is reviewed at regular intervals. As patients feel their symptoms abate and begin to develop insight into the sources of their anxiety and psychic tension, the checklist can be expected to dwindle.

Discontinuing pharmacologic intervention



When you decide to discontinue therapy, tapering dosage is good medical practice. Although rarely necessary after short-term treatment with Valium, gradual dosage reduction is advisable for patients who have been on extended therapy. This gradual discontinuance should preclude either recurrence of pretreatment symptoms or development of untoward side effects. Symptoms of withdrawal have almost always been associated with abrupt discontinuance of therapy at higher dosages taken continuously over long periods of time.

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The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

Usage in Pregnancy: **Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

Dosage: Individualize for maximum beneficial effect. *Adults*: Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients*: 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated (See Precautions.) *Children*: 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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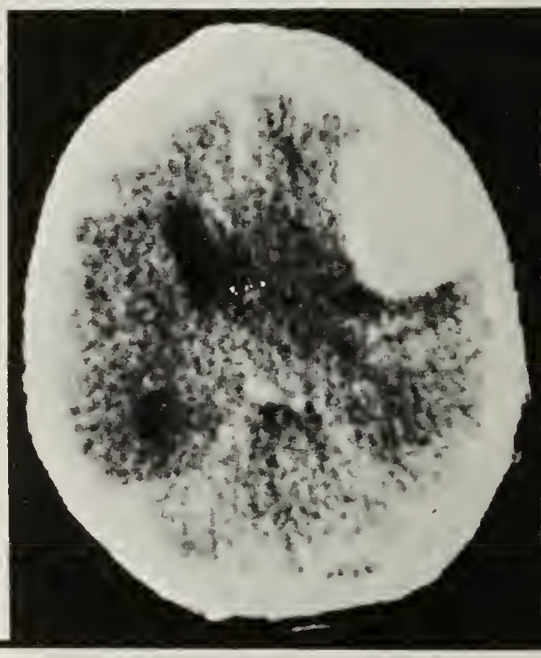
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Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS TO BOTH DRUG CLASSES (INCLUDING ANAPHYLAXIS AFTER PARENTERAL USE).

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Precautions: If an allergic reaction to cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such a condition, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

Usage in Pregnancy—Although no teratogenic or antifertility effects were seen in reproduction studies in mice and rats receiving up to 12 times the maximum human dose or in ferrets given three times the maximum human dose, the safety of this drug for use in human pregnancy has not been established. The benefits of the drug in pregnant women should be weighed against a possible risk to the fetus.

Usage in Infancy—Safety of this product for use in infants less than one month of age has not been established.

Adverse Reactions: In clinical studies in 1493 patients, adverse effects considered related to cefaclor therapy were uncommon and are listed below.

Gastrointestinal symptoms occurred in about 2.5 percent of patients and included diarrhea (1 in 70) and nausea and vomiting (1 in 90).

Hypersensitivity reactions were reported in about 1.5 percent of patients and included morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs tests each occurred in less than 1 in 200 patients.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain—Transitory abnormalities in clinical laboratory tests results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic—Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40)

Hematopoietic—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40)

Renal—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200). [070379R]

*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.[8]

Note. Ceclor® (cefaclor) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

References

1 Antimicrob. Agents Chemother., *8*:91, 1975.
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7 Data on file, Eli Lilly and Company.
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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

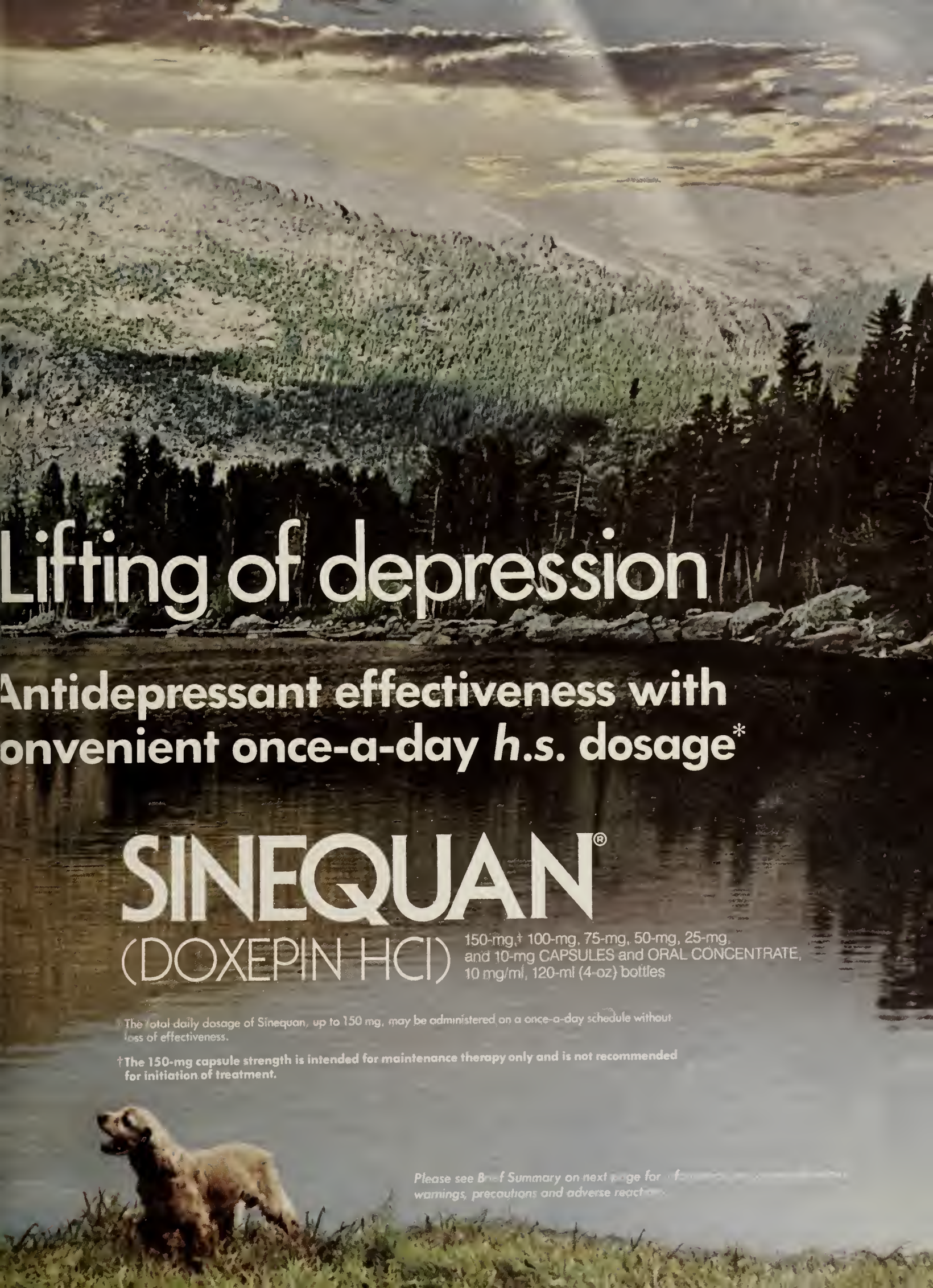
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*The total daily dosage of Sinequan, up to 150 mg, may be administered on a once-a-day schedule without loss of effectiveness.
†The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.
Please see Brief Summary on next page for
warnings, precautions and adverse reactions.

Antidepressant Effectiveness

SINEQUAN®

(DOXEPIN HCl)

150-mg;* 100-mg, 75-mg, 50-mg, 25-mg, and 10-mg CAPSULES and ORAL CONCENTRATE, 10 mg/ml, 120-ml (4-oz) bottles

***The 150-mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Convenient once-a-day *h.s.* dosage

which may improve patient compliance. The total daily dosage, up to 150 mg per day, may be given on a once-a-day schedule without loss of effectiveness. Sinequan may also be given on a divided dosage schedule up to 300 mg per day.

Prominent sedative effect

which may help to relieve the difficulty in falling and staying asleep, and the early-morning awakening often associated with depression.

Established antianxiety activity

to help alleviate the anxiety which often accompanies clinical depression.

Usually well tolerated

at doses up to 150 mg per day, Sinequan does not generally affect the antihypertensive activity of guanethidine and related compounds. Tachycardia and hypotension have been reported occasionally. Drowsiness is the most commonly observed side effect. Dry mouth, blurred vision, constipation and urinary retention have been reported.

Extended range of dosage strengths

for flexibility in individualizing therapy.

BRIEF SUMMARY
SINEQUAN® (doxepin HCl) Capsules/Oral Concentrate

Contraindications. SINEQUAN is contraindicated in individuals who have shown hypersensitivity to the drug. Possibility of cross sensitivity with other dibenzoxepines should be kept in mind.

SINEQUAN is contraindicated in patients with glaucoma or a tendency to urinary retention. These disorders should be ruled out, particularly in older patients.

Warnings. The once-a-day dosage regimen of SINEQUAN in patients with intercurrent illness or patients taking other medications should be carefully adjusted. This is especially important in patients receiving other medications with anticholinergic effects.

Usage in Geriatrics: The use of SINEQUAN on a once-a-day dosage regimen in geriatric patients should be adjusted carefully based on the patient's condition.

Usage in Pregnancy: Reproduction studies have been performed in rats, rabbits, monkeys and dogs and there was no evidence of harm to the animal fetus. The relevance to humans is not known. Since there is no experience in pregnant women who have received this drug, safety in pregnancy has not been established. There are no data with respect to the secretion of the drug in human milk and its effect on the nursing infant.

Usage in Children: The use of SINEQUAN in children under 12 years of age is not recommended because safe conditions for its use have not been established.

MAO Inhibitors: Serious side effects and even death have been reported following concomitant use of certain drugs with MAO inhibitors. Therefore, MAO inhibitors should be discontinued at least two weeks prior to the cautious initiation of therapy with SINEQUAN. The exact length of time may vary and is dependent upon the particular MAO inhibitor being used, the length of time it has been administered, and the dosage involved.

Usage with Alcohol: It should be borne in mind that alcohol ingestion may increase the danger inherent in any intentional or unintentional SINEQUAN overdosage. This is especially important in patients who may use alcohol excessively.

Precautions. Since drowsiness may occur with the use of this drug, patients should be warned of the possibility and cautioned against driving a car or operating dangerous machinery while taking the drug. Patients should also be cautioned that their response to alcohol may be potentiated.

Since suicide is an inherent risk in any depressed patient and may remain so until significant improvement has occurred, patients should be closely supervised during the early course of therapy. Prescriptions should be written for the smallest feasible amount.

Should increased symptoms of psychosis or shift to manic symptomatology occur, it may be necessary to reduce dosage or add a major tranquilizer to the dosage regimen.

Adverse Reactions. NOTE: Some of the adverse reactions noted below have not been specifically reported with SINEQUAN use. However, due to the close pharmacological similarities among the tricyclics, the reactions should be considered when prescribing SINEQUAN.

Anticholinergic Effects. Dry mouth, blurred vision, constipation, and urinary retention have been reported. If they do not subside with continued therapy, or become severe, it may be necessary to reduce the dosage.

Central Nervous System Effects. Drowsiness is the most commonly noticed side effect. This tends to disappear as therapy is continued. Other infrequently reported CNS side effects are confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, and extrapyramidal symptoms and seizures.

Cardiovascular. Cardiovascular effects including hypotension and tachycardia have been reported occasionally.

Allergic. Skin rash, edema, photosensitization, and pruritus have occasionally occurred.

Hematologic. Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura.

Gastrointestinal. Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, and aphthous stomatitis have been reported. (See anticholinergic effects.)

Endocrine: Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels have been reported with tricyclic administration.

Other. Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, and headache have been occasionally observed as adverse effects.

Dosage and Administration. For most patients with illness of mild to moderate severity, a starting daily dose of 75 mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75 mg/day to 150 mg/day.

In more severely ill patients higher doses may be required with subsequent gradual increase to 300 mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300 mg/day.

In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25-50 mg/day.

The total daily dosage of SINEQUAN may be given on a divided or once-a-day dosage schedule. If the once-a-day schedule is employed the maximum recommended dose is 150 mg/day. This dose may be given at bedtime. **The 150 mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.**

Anti-anxiety effect is apparent before the antidepressant effect. Optimal antidepressant effect may not be evident for two to three weeks.

Overdosage.

A. Signs and Symptoms

1. Mild: Drowsiness, stupor, blurred vision, excessive dryness of mouth.
2. Severe: Respiratory depression, hypotension, coma, convulsions, cardiac arrhythmias and tachycardias.

Also: urinary retention (bladder atony), decreased gastrointestinal motility (paralytic ileus), hyperthermia (or hypothermia), hypertension, dilated pupils, hyperactive reflexes.

B. Management and Treatment

1. Mild: Observation and supportive therapy is all that is usually necessary.
2. Severe: Medical management of severe SINEQUAN overdosage consists of aggressive supportive therapy. If the patient is conscious, gastric lavage, with appropriate precautions to prevent pulmonary aspiration, should be performed even though SINEQUAN is rapidly absorbed. The use of activated charcoal has been recommended, as has been continuous gastric lavage with saline for 24 hours or more. An adequate airway should be established in comatose patients and assisted ventilation used if necessary. EKG monitoring may be required for several days, since relapse after apparent recovery has been reported. Arrhythmias should be treated with the appropriate antiarrhythmic agent. It has been reported that many of the cardiovascular and CNS symptoms of tricyclic antidepressant poisoning in adults may be reversed by the slow intravenous administration of 1 mg to 3 mg of physostigmine salicylate. Because physostigmine is rapidly metabolized, the dosage should be repeated as required. Convulsions may respond to standard anticonvulsant therapy; however, barbiturates may potentiate any respiratory depression. Dialysis and forced diuresis generally are not of value in the management of overdosage due to high tissue and protein binding of SINEQUAN.

Supply. SINEQUAN is available as capsules containing doxepin HCl equivalent to 10 mg, 75 mg and 100 mg doxepin: bottles of 100, 1000, and unit-dose packages of 100 (10 x 10's). 25 mg and 50 mg doxepin: bottles of 100, 1000, 5000, and unit-dose packages of 100 (10 x 10's). 150 mg doxepin: bottles of 50, 500, and unit-dose packages of 100 (10 x 10's). SINEQUAN Oral Concentrate is available in 120 ml bottles with an accompanying dropper calibrated at 5 mg, 10 mg, 15 mg, 20 mg, and 25 mg. Each ml contains doxepin HCl equivalent to 10 mg doxepin. Just prior to administration, SINEQUAN Oral Concentrate should be diluted with approximately 120 ml of water, whole or skimmed milk, or orange, grapefruit, tomato, prune or pineapple juice. SINEQUAN Oral Concentrate is not physically compatible with a number of carbonated beverages. For those patients requiring antidepressant therapy who are on methadone maintenance, SINEQUAN Oral Concentrate and methadone syrup can be mixed together with Gatorade®, lemonade, orange juice, sugar water, Tang,® or water, but not with grape juice. Preparation and storage of bulk dilutions is not recommended.

More detailed professional information available on request.

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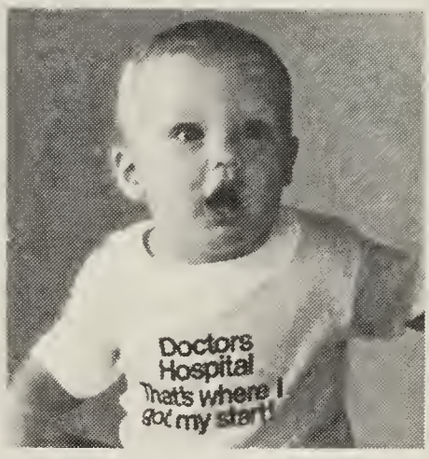
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As a member you'll receive a Cradle Club certificate, be invited to enroll in our classes, tour the hospital's Maternity Wing, plus meet and discuss with other expectant parents the many exciting new experiences coming up. You'll learn everything from preparation for childbirth to the changes a baby will make in your lifestyle.



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Motrin® vs codeine...

ibuprofen



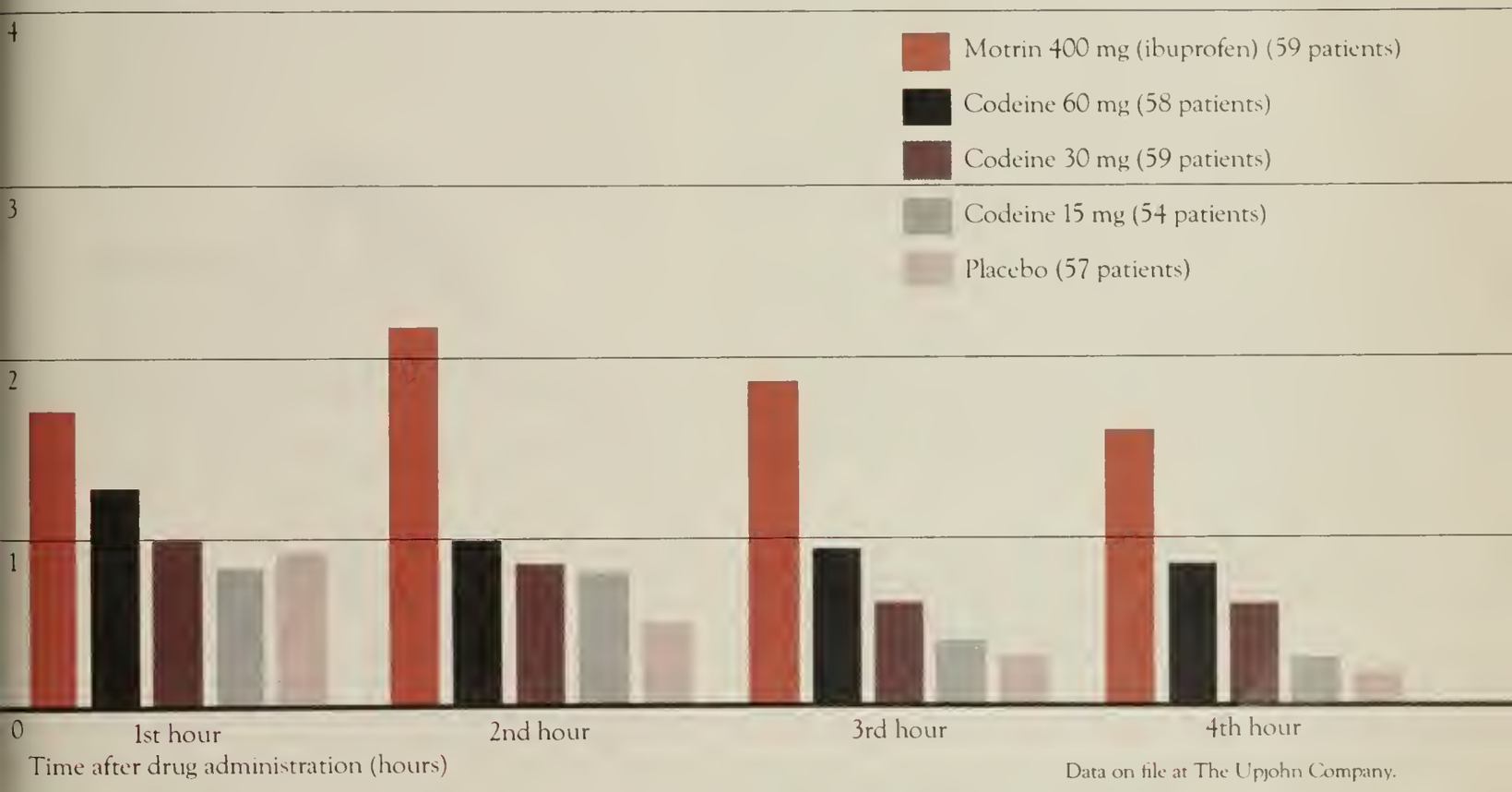
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compare the analgesic effect

Motrin (ibuprofen) 400 mg tablets provided greater relief of pain than codeine in a double-blind, randomized clinical study of 287 patients. *Motrin* was significantly more effective ($p < 0.01$) than codeine 60 mg at the 2-, 3- and 4-hour intervals...significantly more effective ($p < 0.01$) than codeine 30 mg, codeine 15 mg, and placebo at all intervals.

Degree of pain relief—mean scores

4 = Excellent relief 3 = Good relief 2 = Fair relief 1 = Poor relief 0 = No relief



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Motrin® 400 mg TABLETS

ibuprofen, Upjohn

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- The most common side effect with *Motrin* is mild gastrointestinal disturbance.

Please turn the page for a brief summary of prescribing information.

Upjohn

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Motrin® Tablets (ibuprofen, Upjohn)

Indications and Usage: Relief of mild to moderate pain.

Treatment of signs and symptoms of rheumatoid arthritis and osteoarthritis during acute flares and in long-term management. Safety and efficacy have not been established in Functional Class IV rheumatoid arthritis.

Contraindications: Individuals hypersensitive to it, or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin or other nonsteroidal anti-inflammatory agents (see WARNINGS).

Warnings: Anaphylactoid reactions have occurred in patients with aspirin hypersensitivity (see CONTRAINDICATIONS).

Peptic ulceration and gastrointestinal bleeding, sometimes severe, have been reported. Ulceration, perforation, and bleeding may end fatally. An association has not been established. Motrin should be given under close supervision to patients with a history of upper gastrointestinal tract disease, only after consulting ADVERSE REACTIONS.

In patients with active peptic ulcer and active rheumatoid arthritis, nonulcerogenic drugs, such as gold, should be tried. If Motrin must be given, the patient should be under close supervision for signs of ulcer perforation or gastrointestinal bleeding.

Precautions: Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin and the patient should have an ophthalmologic examination, including central visual fields.

Fluid retention and edema have been associated with Motrin; use with caution in patients with a history of cardiac decompensation.

Motrin can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and those on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, blurred vision or other eye symptoms, skin rash, weight gain, or edema.

To avoid exacerbation of disease or adrenal insufficiency, patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin is added.

Drug interactions. *Aspirin* used concomitantly may decrease Motrin blood levels. *Coumarin:* Bleeding has been reported in patients taking Motrin and coumarin.

Pregnancy and nursing mothers: Motrin should not be taken during pregnancy or by nursing mothers.

Adverse Reactions

Incidence greater than 1%

Gastrointestinal: The most frequent type of adverse reaction occurring with Motrin is gastrointestinal (4% to 16%). This includes nausea,* epigastric pain,* heartburn,* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of the GI tract (bloating and flatulence). **Central Nervous System:** Dizziness,* headache, nervousness. **Dermatologic:** Rash* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic:** Decreased appetite, edema, fluid retention. Fluid retention generally responds promptly to drug discontinuation (see PRECAUTIONS).

*Incidence 3% to 9%.

Incidence less than 1 in 100

Gastrointestinal: Upper GI ulcer with bleeding and/or perforation, hemorrhage, melena. **Central Nervous System:** Depression, insomnia. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure. **Special Senses:** Amblyopia (see PRECAUTIONS). **Hematologic:** Leukopenia, decreased hemoglobin and hematocrit.

Causal relationship unknown

Gastrointestinal: Hepatitis, jaundice, abnormal liver function. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities. **Dermatologic:** Alopecia, Stevens-Johnson syndrome. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Hemolytic anemia, thrombocytopenia, granulocytopenia, bleeding episodes. **Allergic:** Fever, serum sickness, lupus erythematosus syndrome. **Endocrine:** Gynecomastia, hypoglycemia. **Cardiovascular:** Arrhythmias. **Renal:** Decreased creatinine clearance, polyuria, azotemia.

Overdosage: In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine, so alkaline diuresis may be beneficial.

Dosage and Administration: Rheumatoid arthritis and osteoarthritis, including flares of chronic disease: Suggested dosage is 300, 400 or 600 mg t.i.d. or q.i.d. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary for relief of pain.

Do not exceed 2400 mg per day.

Caution: Federal law prohibits dispensing without prescription.

For additional product information, see your Upjohn representative or consult the package insert.

MED B-4-S

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May 1980

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Chest Medicine

Chronic Aspiration Pneumonitis

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Aspiration of foreign material into the lungs is a common problem causing both acute and chronic pulmonary disease. This problem has existed throughout recorded history, although its prevalence is still not fully realized. Hippocrates stated "For drinking to produce a slight cough or for swallowing to be forced is bad." Inspite of the reference centuries ago, and the recent increased interest in aspiration pneumonitis, not a single chapter is devoted to aspiration in the 1977 edition of a pediatric pulmonary disease textbook.[1]

Many different syndromes are named "aspiration pneumonitis." These syndromes are separated by the types of substances aspirated and by the resultant acute or chronic symptoms.[2,3]

Unlike acute aspiration, chronic aspiration usually progresses gradually and the episodes of aspiration are usually not witnessed. Chronic aspiration occurs predominantly in the very young (<2 y/o) and the very old (>65 y/o). Causes of recurrent aspiration are numerous and can be divided into three basic groups (Table 1).

In the immature infant, dysphagia is a common cause of recurrent aspiration. The suck and gag reflexes are primitive or nonexistent until 34 weeks gestation. Excessive attempts to nipple feed these infants may produce or exacerbate pulmonary disease. Additionally, any neurologic state such as sleep, anesthesia, or quadraplegia that affects the gag reflex will also increase the risk of dysphagia and aspiration in any age patient.

Table 1
Causes of Chronic Aspiration

1. **Dysphagia**
 - Immaturity of swallowing mechanism
 - Neurologic abnormalities (Werdnig-Hoffman, cerebral palsy)
 - Dysautonomia
 - Myasthenia gravis; muscular dystrophy
2. **Esophageal Malfunction**
 - Gastroesophageal reflux
 - Esophageal stricutre
 - Poor motility (i.e. post tracheo-esophageal fistula, scleroderma)
 - Achalasia
3. **Abnormal Anatomy**
 - H-type tracheo-esophageal fistula
 - Tracheostomy
 - Esophageal tumor
 - Pharyngeal and supraglottic abnormalities

Esophageal malfunction is the most frequent cause of recurrent aspiration in young children and older adults. Apparent relationships between gastroesophageal reflux (GER) and recurrent respiratory disease have been demonstrated in the past twenty years. Following surgical or medical treatment for reflux, many patients have noted improvement of respiratory symptoms. A few studies have shown that adults with unmanageable asthma and/or pulmonary fibrosis have a high prevalence of GER. In addition, four recent studies of children with recurrent respiratory problems have indicated an exceedingly high prevalence of gastroesophageal reflux.[4-7] Gastroesophageal reflux is fairly common in young children; however, only a small percent of children with reflux have respiratory disease.

Abnormalities in esophageal function occurs in patients following the repair of tracheoesophageal fistulas (TEFs). These patients also have a high prevalence of pulmonary problems. Between 30 and 80 percent of TEF survivors report multiple episodes of pneumonia. These pulmonary symptoms decrease with advancing age; however, studies of esophageal function show a continued high (>90%) prevalence of esophageal dysmotility and/or GER.[8] It is not known whether this esophageal abnormality is producing pulmonary problems, or if TEF patients have a primary pulmonary defect such as tracheomalacia.

Tracheal anatomic abnormalities are infrequent causes of recurrent aspiration. Although the H-type TEF is very rare (less than 1% of TEFs), examination for this abnormality should be included in the evaluation of unexplained, severe and recurrent lung disease. In addition, breakdown of a previously repaired TEF may produce a "new" H-type fistula. Patients with

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Table 2
Symptoms and Signs of Recurrent Aspiration

Infants:	Feeding difficulty Failure to thrive Excessive drooling Coughing or choking during feeding Gurgling breath sounds Apnea and cyanotic spells
Children and Young Adults:	Difficult to control "asthma" Vomiting (including hematemesis) Exacerbation of respiratory symptoms at night
Elderly:	Difficulty swallowing solid food Nighttime regurgitation Frequent awakening with choking or wheezing
All ages:	Lower lobe crackles Localized wheezing Recurrent pneumonia Tachypnea

tracheostomies also have an increased risk for recurrent aspiration. Cameron[9] studied a group of comatose or semi-comatose patients with tracheostomies and found that 70% were aspirating saliva into their lungs. The use of low pressure cuffed tracheostomy tubes reduced aspiration by 80%. He postulated that aspiration occurred because of the tracheal attachment to the anterior neck, preventing normal laryngeal excursion with swallowing.

The patient with chronic pulmonary symptoms is difficult to evaluate for recurrent aspiration because no specific diagnostic tests exist. Symptoms are nonspecific (Table 2), although certain combinations of symptoms may be helpful in the diagnosis. Patients with recurrent respiratory problems should be asked if a temporal relationship exists between feeding abd the respiratory symptoms. Aggravated respiratory symptoms occurring several hours after going to sleep may indicate reflux and aspiration in older children and adults. Repeated exams are often helpful because of the transient nature of pulmonary abnormalities. Chest radiographs usually show hyperinflation with evanescent infitrates in the dependent lobes. In addition to routine diagnostic studies of recurrent pulmonary symptoms, special tests may be needed to establish the diagnosis of recurrent aspiration (Table 3).

Sputum cytology is a simple test that can be performed in the physician's office (Table 4). When milk is placed in the trachea of animals, fat is rapidly phagocytized by macrophages. Such fat-filled macrophages will be present in the tracheal exudate from infants who aspirate milk.[10]

Table 3
Special Tests For Recurrent Aspiration

Sputum Cytology
Barium Swallow
Gastroesophageal Scan
Gastro-pulmonary Scan
Methylene Blue Test
Esophageal Motility
"Tuttle" Test
Continuous Esophageal pH Monitoring (24°)
Bronchoscopy and Biopsy

Table 4
Sputum "Wet Prep" Technique

1. Obtain a coughed sputum sample.
2. Using a wooden applicator, place a small amount (1-3 mm diameter) of the optically dense sputum on a glass slide.
3. Gently press a cover slide over the sample.
4. Examine under low magnification with low light to determine adequacy of sample. (No squamous cells present).
5. Further identify cells using the oil immersion lens.
6. Fat-laden macrophages appear as large, slightly pigmented, globular cells when viewed under decreased light.

The barium swallow is probably the most frequent test performed on patients with suspected aspiration. In young children and older adults, this test often discloses a hiatal hernia or GER. Correlating these positive test results with aspiration, however, is difficult. Abnormal barium swallows are common in this aged patient, regardless of respiratory symptoms. Therefore, no connections can be assumed between test abnormalities and pulmonary disease. This test helps to diagnose aspiration pneumonitis only if barium is shown to enter the trachea.

Gastroesophageal scanning is performed by giving a patient 3-5 μC of Technitium sulfur coloid mixed in 2-3 ounces of fluid, followed by scanning the mediastinum before and during abdominal compression. Regurgitation during scanning indicates GER.[11] Further test refinements, including prolonged scanning of the lungs, may provide direct evidence of aspirated gastric contents. These three tests; sputum cytology, barium swallow showing aspirated barium, and technitium scan showing pulmonary uptake are the only tests considered as diagnostic of aspiration in a patient without a tracheostomy.

For patients with tracheostomies, one additional technique for diagnosing aspiration is available. After methylene blue is instilled into the mouth, the trachea is serially suctioned through the tracheostomy. If methylene blue is detected by suctioning, then aspiration can be assumed.

Other tests to diagnose GER include esophageal manometrics, continuous pH monitoring in the lower

esophagus, and the "Tuttle test" - during which acid is instilled into the stomach and the esophagus is monitored for a change in pH before and during abdominal compression. All of these tests can diagnose reflux, although none document pulmonary aspiration.[12]

Bronchoscopy and lung biopsy are rarely indicated in the chronic aspirator since the inflammation from aspirated material is usually transient and nonspecific. The chronic, recurrent aspirator has pathologically mononuclear infiltrates, occasional interstitial edema, and frequent granuloma formation in the lung parenchyma. The airways may have squamous metaplasia. Eventually, chronic insterstitial pneumonia develops, frequently complicated by bacterial overgrowth. The last stage of severe, recurrent aspiration is obliterative bronchiolitis and pulmonary fibrosis.

Recurrent aspiration requires two types of therapy. Most importantly, the primary cause should be found and treated if possible. Next, treatment is needed for secondary symptoms such as bronchospasm, increased mucus production and small airway obstruction with resulting atelectasis. A combination of bronchodilators and postural drainage are often effective for this. Although inhaled bronchodilators alone may be effective, theophylline is frequently used for a prolonged effect. A possible complication of these medications is relaxation of the lower esophageal sphincter, increasing the likelihood of gastroesophageal reflux. Bronchoscopy should be considered only if foreign body inhalation is likely or atelectasis presists for many months.

Dysphagia due to immaturity will improve as the infant grows. If a pharyngeal abnormality exists, surgery is often necessary. A special nipple (Goats nipple) or an asepto syringe for feeding infants may temporarily bypass the swallowing difficulty related to pharyngeal anatomic abnormalities. In progressive neuromuscular problems, gavage feeding or a feeding gastrostomy may be necessary. Surgery is also indicated for H-type fistulas and esophageal strictures. Elderly patients with achalasia or esophageal motility problems should eat in an upright position and not within the hour before lying down.

Therapy is more controversial for recurrent aspiration associated with GER. A causal relationship to lung disease is difficult to verify, and improvement with treatment is often hard to substantiate. Three approaches to therapy have been advocated: 1) pharmacologic; 2) erect posture with thickened feedings; and 3) surgery.

Whitington[13] described the use of bethanechol (urecholine) in two patients who had recurrent pulmonary problems and GER following TEF repair. Both patients had improved lower esophageal sphincter tone while on bethanechol, although one patient later required a Nissen fundoplication because of persistent respiratory symptoms. Pharmacologic therapy continues to be speculative and should not be used on the routine patient.

Postural management of GER in children was first studied by Carre in 1960.[14] He showed that in two-thirds of his patients, reflux symptoms improved with upright posturing. This required that the infant sit at a 60 degree angle, 24 hours a day. Patients treated less than 24 hours a day improved only one-third the time. Thickened feedings using cereal and solids had some benefit, but the results were not consistent. Other authors report similar results with posturally managed children less than two years old. If esophagitis or a stricture is present, antacid therapy may help. Similar treatment with thickened foods, upright posture, and antacids is usually effective in older patients with reflux.

Surgical treatment for GER has never been studied in a prospective, controlled manner. All past studies have shown that 85-100% of patients treated surgically for GER will improve. Many different surgical approaches have been tried, although the Nissen repair is most popular.[15] Objective follow-up data including recurrence of symptoms or incidence of repair "breakdown" are scarce.

Until a sure method of diagnosing aspiration pneumonitis is developed, therapeutic modalities will remain speculative. For now, only symptoms should be treated. If these attempts are unsuccessful or if there is an obvious anatomic defect, invasive procedures such as bronchoscopy and surgery should then be considered.

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Seminars in Dermatology

Angiolipoma

Presenting As a Breast Mass

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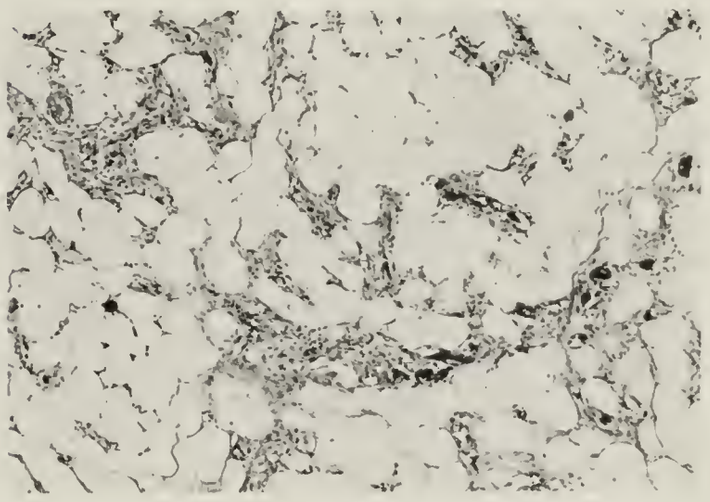


Figure 1
Aggregates of mature fat cells interspersed with clusters of capillaries (Hematoxylin-eosin, x 66).

The angiolipoma is one of a small number of subcutaneous or cutaneous tumors which are frequently associated with pain. It resembles the lipoma histologically, with the addition of a prominent vascular component. We present a 66 year old woman with metastatic adenocarcinoma of the gallbladder diagnosed six months prior to her presentation with an angiolipoma appearing as a nontender breast mass.

Case History

This 66 year old Mexican American woman was admitted for evaluation of a nontender, freely movable mass in the left breast. The lesion was detected by palpation at a cancer detection project and was negative on mammography and thermography.

Past medical history included nine pregnancies with seven live deliveries. Six years before admission, benign proliferative endometrial tissue was removed from the uterus on curettage for postmenopausal bleeding associated with Premarin therapy.

Six months before admission, she developed right upper quadrant pain, jaundice, and weight loss. After evaluation, exploratory laparotomy demonstrated extensive metastatic carcinoma to the liver from a well differentiated adenocarcinoma of the gallbladder. The diagnosis was confirmed on liver biopsy and cholecystectomy. She lost 28 pounds and became jaundiced with increasingly severe abdominal pain. Abdominal radiotherapy resulted in relief of pain, anorexia, and jaundice.

Both her mother and father died from myocardial infarction. A brother's death was due to meningitis, and a sister died because of diabetes mellitus. Another sister was treated for carcinoma of the uterine cervix. There was no history of breast, subcutaneous or cutaneous tumors in other family members.

On admission, physical examination demonstrated a 1.5 x 1 cm freely movable, nontender mass in the left breast. Nipple discharge and skin dimpling were negative. The axillary lymph nodes were not palpable. The remainder of the physical examination and laboratory data were noncontributory.

The excision of the nodule was uneventful. The lesion readily shelled out of the surrounding adipose tissue. The surgical wound healed uneventfully.

Grossly the lesion consisted of pale yellow lobular adipose tissue with a uniform cut surface free of hemorrhage, necrosis, or fibrosis.

Histologically, mature fat cells form large lobular aggregates (Figure 1). Clusters of capillaries lined by small endothelial cells were present focally. No hemorrhage, inflammation, or fibrosis was seen. The Bodian stain was negative for nerve fibers.

Comment

The clinical appearance of the angiolipoma is well described by Howard and Helwig.[1] The angiolipoma frequently appears shortly after puberty and presents as a small tender subcutaneous lesion. Additional lesions may occur during the next several years.[1,2] The trunk

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and upper extremities are the usual locations. Unusual locations include skeletal muscle (with deep infiltration) and oral soft tissues.[1,2,3] In 248 patients there were no examples of subcutaneous lesions from the face, scalp, palms, or soles.[1] The age of onset ranges from 2 to 67 years;[4] the average age of onset in the cases reviewed by Howard and Helwig was 17 years.[1]

The lesions may be disproportionately painful and may even present as an invisible painful focus requiring close scrutiny to demonstrate any cutaneous elevation. The overlying skin usually shows no significant abnormalities.

The quantity of the vascular component is variable. Many lesions consist of lobular adipose tissue with slight angiomatous proliferation, usually at the periphery. Other lesions have a prominent angiomatous component. Fibrin thrombi are seen in a few vessels in a significant number of lesions.[4] The degree of vascularity does not always correlate with the degree of tenderness. Some patients with small numbers of capillaries have symptoms more severe than those with lesions composed of more than 50% blood vessels.[5] The small amount of ground substance between the capillaries stains positively for hyaluronic acid. A few mast cells may be present.[1]

Infiltration of surrounding structures has been described.[2,4,6] Wide excision is required to prevent recurrence of these lesions. The angiographic appearance may suggest the neovascularity of a malignancy.[2]

Our case is unusual in that the patient is elderly and the lesion is nontender. These lesions have not been associated with visceral malignancy or other systemic disease. The occurrence of the lesion shortly after surgical therapy and radiotherapy for metastatic adenocarcinoma of the gall bladder may be coincidental. However, a hormonal, metabolic or tumor-elaborated factor (such as tumor angiogenesis factor) together with hepatic insufficiency might be postulated to induce this angiolipoma.

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Seminars in Endocrinology and Metabolism

Solitary Thyroid Nodule

Newer Techniques for Differentiating Malignant from Non-malignant Lesions

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Editor:
Stephen E. Dippe, M.D.

The managment of a solitary thyroid nodule has been compounded in the past decade by unprecedented media reports concerning the relationship between thyroid and prior head and neck irradiation abnormalities. Additionally, there have been advances in diagnostic technology as well as resurgence of interest in needle biopsy and needle aspiration of thyroid nodules. These factors, as well as professional and lay efforts at cost containment of medical care, have created a dilemma for the clinician.

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The prevalence of palpable thyroid nodules in our adult population has been estimated at 4.2%.[1] Less than 5% of these thyroid nodules are malignant.[2] For 1979, National Cancer Institute estimates of new cases and deaths due to thyroid cancer were 9,000 and 1,000 respectively.[3] A disproportionate number of thyroid cancer related deaths are due to anaplastic cancer which constitutes only 10-15% of all thyroid malignancies. Anaplastic cancer usually presents as a rapidly growing mass, occurs primarily in older middle age or elderly patients, and frequently has a rapidly fatal prognosis. However, the majority of malignant thyroid nodules are due to differentiated thyroid cancer, papillary carcinoma (60%) and follicular carcinoma (20%); and least commonly, malignant nodules are due to medullary carcinoma (5-8%).

Papillary carcinoma usually presents as a nodule with features of indolent growth and a low but variable potential for morbidity and mortality. Papillary carcinoma of the occult variety (less than 1.5 cm.) has an excellent prognosis with essentially no associated mortality and surgical removal usually constitutes a cure.[4,5] Papillary carcinomas which are larger than 1.5 cm., frequently have a follicular component, and are associated with an increased morbidity and mortality which is dependent upon the propensity of the given tumor for extrathyroidal local invasion or distant metastasis.[4,5] Follicular carcinoma has a worse prognosis because it frequently demonstrates vascular invasion and distant metastatic involvement.[4,6]

Wnen a patient presents with a palpable thyroid nodule and has a history of head and neck irradiation, surgical intervention has been advised.[7] However, as in non-irradiated thyroid glands, benign thyroid nodules occur much more frequently than malignant nodules in this setting.[8-11] At surgery, the nodule referred for thyroidectomy is frequently benign and the gland often contains microscopic and multicentric papillary carcinoma which is not thought to behave differently from occult papillary carcinoma without a history of irradiation.[12,13] However, there are contrary reports suggesting more agressive behavior and a greater prevalence of distant metastases.[14-16] The prevalence of malignancy in a palpable thyroid nodule with a history of prior irradiation therapy has been estimated at 4 - 9% or about twice that of the non-irradiated nodule population.[8] Referral for thyroidectomy of all patients who have a palpable thyroid nodule and a history of prior irradiation therapy remains controversial.[17]

At the time of presentation, most patients with a solitary thyroid nodule do not have a history of prior irradiation or clinical evidence which suggests malignancy (hard consistency or fixation of the nodule, local adenopathy or masses, vocal cord paralysis, or prior evidence of distant metastatic involvement). Conventional clinical and laboratory criteria have resulted in a continuing low surgical yield for thyroid cancer which averages about 20%.[18,19] During the past ten years, isotopic imaging techniques have been modified, diagnostic ultrasound has been introduced, and needle biopsy and aspiration have been revived. The sum purpose of all of these modalities is to aid the clinician in selecting patients who, on the basis of diagnostic work up, are most likely to be harboring a malignant solitary thyroid nodule upon referral for thyroidectomy.

Traditionally, a thyroid scan with T echnetium-99m, Iodine -131 or Iodine-123 has been employed to screen thyroid nodules. The majority of both benign and malignant nodules are hypofunctioning or "cold" by scintiscan or scintophoto, while some of both are "warm" and rarely, a malignant nodule may be hyperfunctioning or "hot." Because isotopic imaging is non-specific for malignancy, both Mazzaferri, et al[5] and Nelson et al[20] have advised that unless a clinically non-suspicious nodule is hyperfunctioning or "hot," other criteria must be employed for a decision concerning disposition of the nodule.

Diagnostic ultrasound has been advocated as an additional technique for all nodules that are not hyperfunctioning by isotopic imaging.[21,22] By this technique, the composition of a thyroid nodule can be defined as solid, cystic or mixed (a solid nodule with cystic degeneration). A totally cystic nodule (3-5% of all nodules) is infrequent and if less than 4cm. in size, may regress after aspiration alone.[23] By combining ultrasound with aspiration and cytologic examination of the cyst fluid, there has been only a rare report of missed differentiated thyroid cancer which was totally cystic by diagnostic ultrasound criteria.[24] Thus, the bulk of the nodules remaining after diagnostic ultrasound screening require further assessment.

In recent years, there has been a resurgence of interest in two techniques for percutaneous needle assessment of thyroid nodules. The first is the utilization of the Vim-Silverman or Trucut needle which

has been most helpful in the past in the differential diagnosis of diffuse goiter.[25,26] A core of tissue is obtained by this technique for histologic evaluation. Needle biopsy of a thyroid nodule requires local anesthesia and a skin incision, can induce a hematoma or hemorrhage, damage to the laryngeal nerve, or puncture of the trachea. Expertise is required to consistently impale and obtain a core of tissue from a nodule by this technique.

In the past few years, a number of articles have appeared concerning the use of percutaneous fine-needle aspiration of a soltary thyroid nodule.[17,24,26-30] By this technique, multiple aspirations of a nodule can be taken through a fine gauge needle to provide cytologic material for smear or cell block preparation instead of a tissue core. This technique is not associated with the risks of a needle biopsy and does not require a skin incision or local anesthesia. The fine-needle aspiration has limitations regarding individual capability to obtain an adequate aspirate, the need for experienced and competent cytologic review, and the lack of tissue for histologic review. The latter is pertinent when this technique yields differentiated follicular cells since criteria for malignancy are based on histo logic criteria of extra nodular spread and vascular invasion.[30] Nevertheless, fine-needle aspiration is as accurate as needle biopsy (less than 5% false negative and virtually no false positive results by both techniques) and fine-needle aspiration may confidently exclude fifty to eighty percent or more of patients who were formally referred for thyroidectomy.[17,26,27,30]

Finally, some clinicians elect to observe a solitary thyroid nodule for a period of time, primarily in middle aged and elderly females, with or without L-thyroxine suppressive therapy. Most benign nodules and differentiated thyroid malignancies are TSH sensative but are not necessarily dependent on TSH for growth characteristics. Thus, thyroid hormone suppression of TSH secretion is not a reliable means of ruling out malignancy since growth is frequently indolent and malignant nodules occassionally regress in size.

In summary, management and a number of diagnostic techniques for evaluating a solitary thyroid nodule have been reviewed. Additional imaging techniques including scintiscan with radiolabeled anti-tumor agents, computerized tomography, and soft tissue x-rays of the neck have not been reviewed since these have been demonstrated to seldom yield additional information which will aid in the disposition of a solitary thyroid nodule and may expose the patient to additional radiation. Employment of fine-needle aspiration appears to be the most logical approach to a solitary thyroid nodule, but it does require expertise in aspiration technique, smear preparation, and cytologic review. As an aid to the clinician, fine-needle aspiration is the most effective approach, since the technique both characterizes the pathologic process and defines the need for surgical referral.

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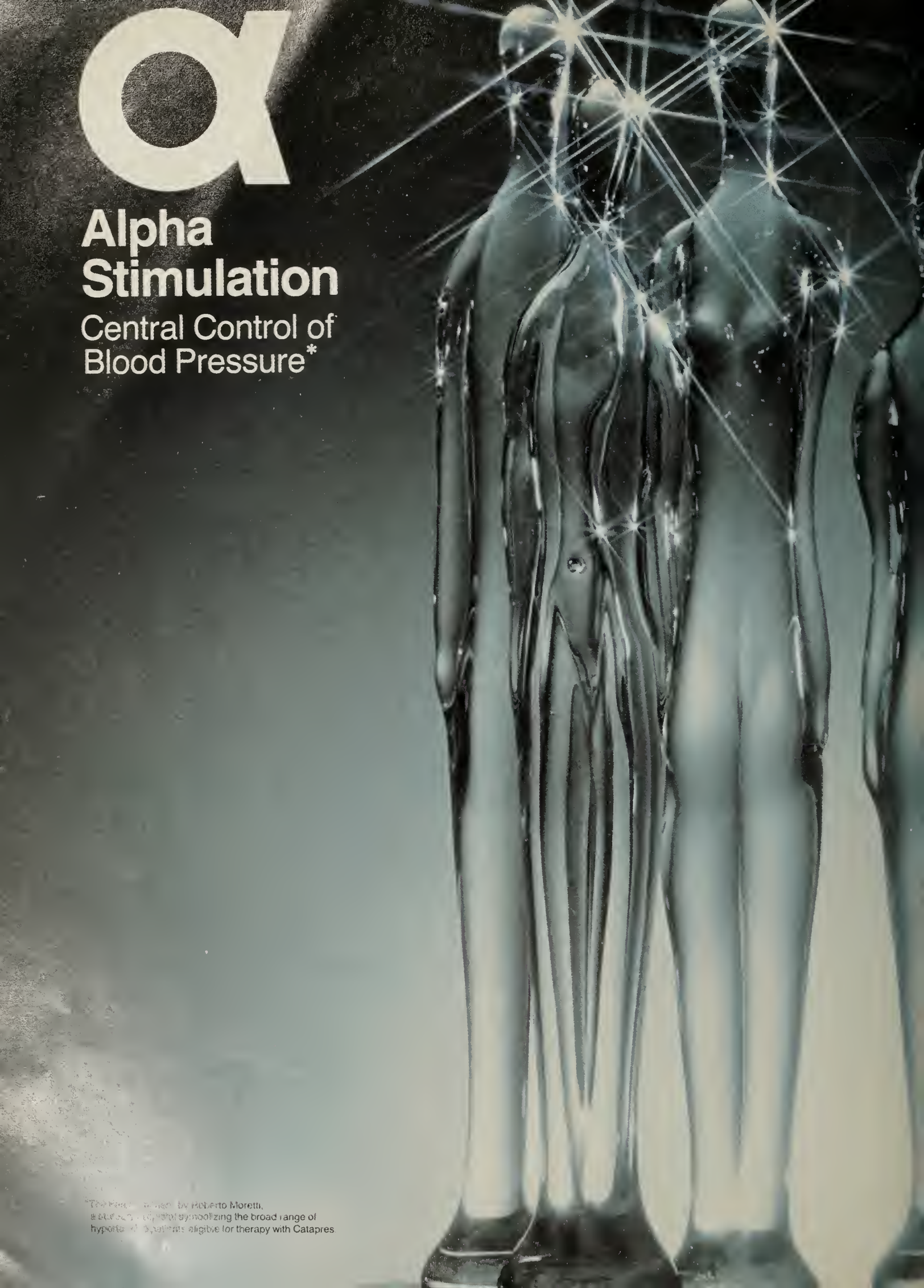
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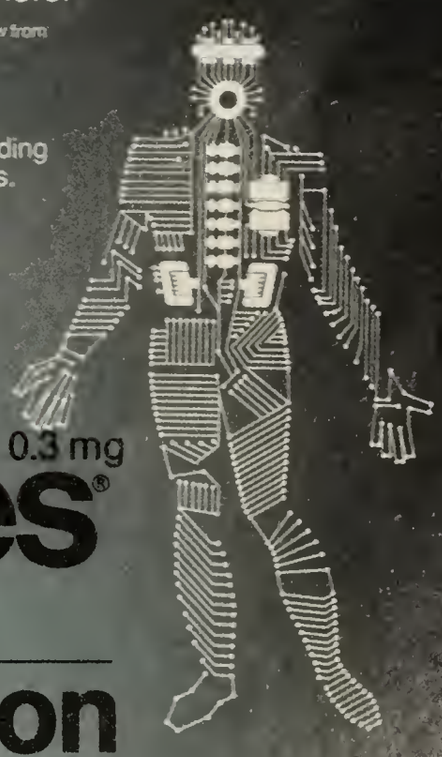
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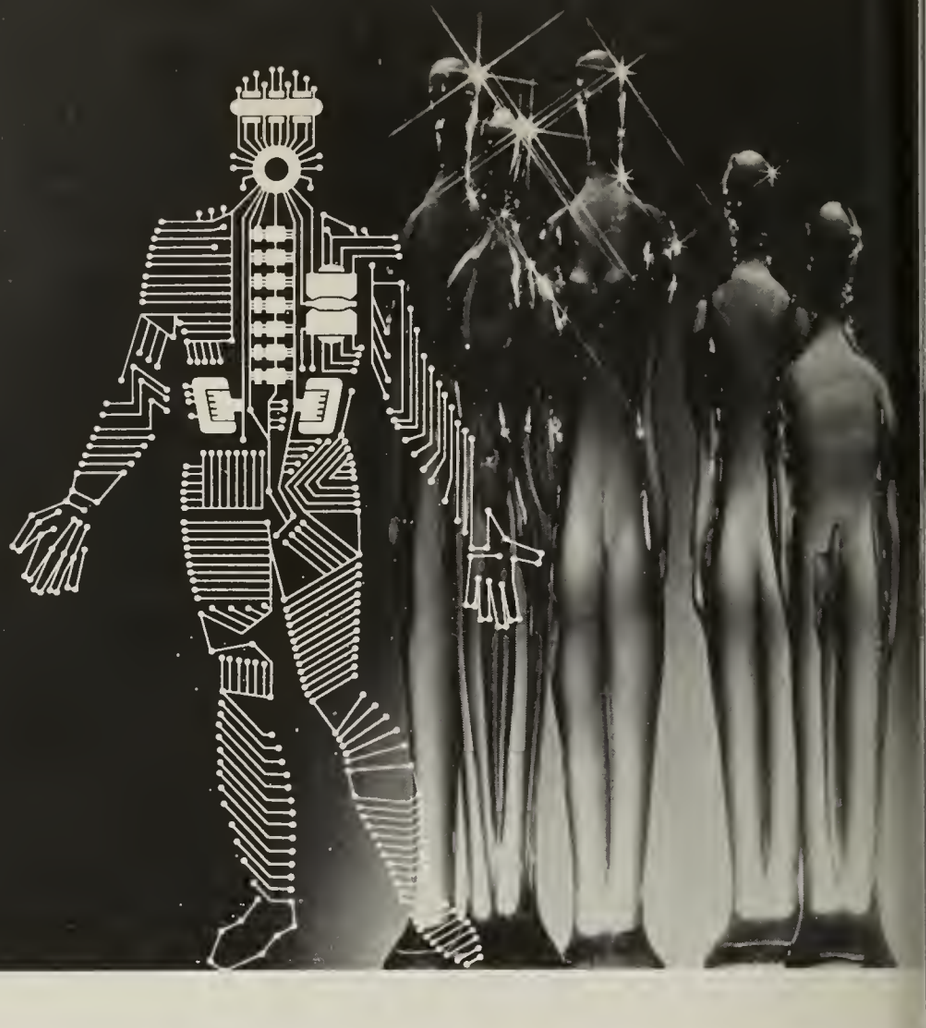


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Usage in Pregnancy: In view of embryotoxic findings in animals, and since information on possible adverse effects in pregnant women is limited to uncontrolled clinical data, the drug is not recommended in women who are or may become pregnant unless the potential benefits outweigh the potential risk to mother and fetus.
Usage in Children: No clinical experience is available with the use of Catapres (clonidine hydrochloride) in children.

Precautions: When discontinuing Catapres (clonidine hydrochloride), reduce the dose gradually over 2 to 4 days to avoid a possible rapid rise in blood pressure and associated subjective symptoms such as nervousness, agitation, and headache. Patients should be instructed not to discontinue therapy without consulting their physician. Rare instances of hypertensive encephalopathy and death have been recorded after cessation of clonidine hydrochloride therapy. A causal relationship has not been established in these cases. It has been demonstrated that an excessive rise in blood pressure, should it occur, can be reversed by resumption of clonidine hydrochloride therapy or by intravenous phentolamine. Patients who engage in potentially hazardous activities, such as operating machinery or driving, should be advised of the sedative effect. This drug may enhance the CNS-depressive effects of alcohol, barbiturates and other sedatives. Like any other agent lowering blood pressure, clonidine hydrochloride should be used with caution in patients with severe coronary insufficiency, recent myocardial infarction, cerebrovascular disease or chronic renal failure.

As an integral part of their overall long-term care, patients treated with Catapres (clonidine hydrochloride) should receive periodic eye examinations. While, except for some dryness of the eyes, no drug-related abnormal ophthalmologic findings have been recorded with Catapres (clonidine hydrochloride), in several studies the drug produced a dose-dependent increase in the incidence and severity of spontaneously occurring retinal degeneration in albino rats treated for 6 months longer.

Adverse Reactions: The most common reactions are dry mouth, drowsiness a sedation. Constipation, dizziness, headache, and fatigue have been reporte Generally these effects tend to diminish with continued therapy. The followi reactions have been associated with the drug, some of them rarely. (In sor instances an exact causal relationship has not been established.) These inclu Anorexia, malaise, nausea, vomiting, parotid pain, mild transient abnormalities liver function tests; one report of possible drug-induced hepatitis without icter and hyperbilirubinemia in a patient receiving clonidine hydrochloride, chl thalidone and papaverine hydrochloride. Weight gain, transient elevation of blo glucose, or serum creatine phosphokinase: congestive heart failure, Raynau phenomenon; vivid dreams or nightmares, insomnia, other behavioral chang nervousness, restlessness, anxiety and mental depression. Also rash, a gioneurotic edema, hives, urticaria, thinning of the hair, pruritus not associat with a rash, impotence, urinary retention, increased sensitivity to alcohol, drynes itching or burning of the eyes, dryness of the nasal mucosa, pallor, gynecomast weakly positive Coombs' test, asymptomatic electrocardiographic abnormaliti manifested as Wenckebach period or ventricular trigeminy.

Overdosage: Profound hypotension, weakness, somnolence, diminished or a sent reflexes and vomiting followed the accidental ingestion of Catapres (clonidi hydrochloride) by several children from 19 months to 5 years of age. Gast lavage and administration of an analeptic and vasopressor led to complete r covery within 24 hours. Tolazoline in intravenous doses of 10 mg at 30-minu intervals usually abolishes all effects of Catapres, (clonidine hydrochloride) ov dosage.

How Supplied: Catapres, brand of clonidine hydrochloride, is available as 0.1 m (tan) and 0.2 mg (orange) oval, single-scored tablets in bottles of 100 and 1000. Al available as 0.3 mg (peach) oval, single-scored tablets in bottles of 100.

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Infectious Disease

Antibiotic Chemotherapy of CNS Infections

Enrique L. Labadie, M.D.
Patrick O. Tennican, M.D.

Antimicrobial agents enter the CSF either by active secretion or diffusion through the choroid plexus or via the interstitial fluid of nervous tissue. Elimination of the drug may occur through the venous sinuses, the choroid plexus, the capillary network in the central nervous system or by direct metabolism by the nervous tissue itself. Diffusion of antimicrobial agents into the CSF is determined by lipid solubility, molecular size, ionization, and protein binding in blood. Consequently, chloramphenicol, a small lipid soluble antibiotic with low blood protein binding, is superconcentrated in brain tissues to nine times as much as circulating blood level, and also achieves a high CSF level of 33 to 50% of usual serum concentration.[1,2]

On the other hand, penicillins have poor penetrating ability through an intact blood-brain barrier and are also removed rapidly from the choroid plexus. Fortunately, whenever meningitis occurs, the inflammatory reactions increase the blood-brain barrier permeability to antibiotics and, in addition, inflammation retards drug removal from CSF. These favorable circumstances cause a net increase of penicillin CSF/serum ratio from 1-5% to 5-10%. Recent studies appear to substantiate animal data that probenicid can increase CSF concentrations of penicillins even further by blocking the active transport mechanism that impedes their entrance into the CSF.

For the usually Penicillin-sensitive pneumococcal or meningococcal meningitis, doses of 300,000 units/kg/day yields CSF levels which greatly exceed the organism's minimal inhibitory concentration in vitro. (MIC). Simultaneous administration of a bacteriostatic antibiotic (e.g., tetracycline) should be avoided.

To substantiate the effect of altered CSF/serum antibiotic levels during meningeal inflammation, Barrett, using ampicillin, found a CSF/serum ratio of 4% in normal humans, 9% in cases with viral meningitis and 13% in patients suffering bacterial meningitis. In meningitis cases caused by Haemophilus influenzae, ampicillin given at a dose of 50 mg/kg every six hours intravenously achieved early CSF peak levels of 10-15 ug/ml with therapeutic levels maintained for up to four hours after a single infusion dose. However, after ten days of treatment and therefore diminished meningeal inflammation, ampicillin CSF levels had now fallen towards the usually lower CSF levels as obtained in normal subjects.[3-5]

Treatment of gram negative bacillary meningitis is generally a more difficult task, owing to the increased prevalence of multiresistant pathogens. The cephalosporins, which have a fairly broad gram-negative coverage, do not appreciably cross the blood-CSF barrier to provide reliable therapy. Poor penetration into the CSF by the aminoglycoside antibiotics generally requires that they be used not only systemically, but also through intracisternal or intraventricular routes.[6-10] Intermittent lumbar subarachnoid injections of gentamicin frequently fails to produce therapeutic vertricular fluid concentrations of the agent, or to improve clinical outcome. Since intraventricular administration of gentamicin, tobramycin or amikacin[11] can achieve reliably high CSF concentration within the ventricles, clinical studies have been set up recently to assess their use via intraventricular reservoirs or shunts, especially since there is still a high morbidity and mortality associated with gram-negative meningitis.

Carbenicillin or ticarcillin are particularly useful in meningitis caused by Pseudomonas aeruginosa and Enterobacter infections, as they can be given systemically in high dosages to exceed MICs for susceptible organisms in CSF.[12] More recently, the combination of thrimethoprim/sulfamethoxazole, which is effective against many gram-negative organisms, including the penicillinase-producing (beta lactamase) Haemophilus influenzae, has been found to achieve therapeutic concentrations in the CSF, when given systemically in the presence of bacterial meningitis.[13] Similarly, the synergistic effects of sulfamethoxazole/trimethoprim on nocardia asteroids, leads us to believe that this combination may become a very effective treatment of nocardial meningitis.[14-16]

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Metronidazole, a nitroimidazole antiparasitic, but also bactericidal drug, should soon be available in this country in its intravenous form for the treatment of anaerobic bacterial infections. This remarkable agent achieves excellent brain tissue penetration and therapeutic CSF concentrations as high as 30 to 200% of serum levels, and with minimal toxicity. It has been used successfully in Europe to treat not only anaerobic bacterial meningitis, but also anaerobic bacterial brain abscesses .[17,18] It is presently used experimentally in this country and our personal experience with this drug used in difficult brain abscess cases that were caused by multiresistant anaerobic organisms, has been impressively rewarding.

For tuberculous meningitis, isoniazid penetrates well into the CSF but, most clinicians would prefer to use triple therapy for disseminated tuberculosis. Therefore, in cases presenting with tuberculous meningitis, Ethambutol and Rifampin can also be given systemically, as both achieve good therapeutic CSF concentration. For multiresistant mycobacterial organisms or when drug toxicity precludes usage of the three previously mentioned, pyrazinamide may be used systemically instead, as it also produces excellent CSF concentrations of 50 ug/ml after a 1.0 gm dose in adults, which is practically the same as the usual peak serum level of 50 ug/ml. Experienced authors still advocate early administration of intratechal streptomycin, since inspite of its toxicity, its use significantly reduces mortality and morbidity.[58]

For treatment of fungal meningitis, the armamentarium is limited by poor fungal susceptibility and low CSF drug penetration. Only 5-fluorocytocine used systemically achieves reliably high CSF levels or approximatley 75% of usual serum levels of 25-125 ug/ml. Unfortunately, 5-fluorocytosine is active only against Cryptococcus neoformans, the majority of Candida species and Torulopsis glabrata. 5-fluorocytosine exerts fungicidal activity by its metabolism within the yeast to 5-fluoruracil, a lethal inhibitor of pyrimidine synthesis.[19,20]

Amphotericin B, a widely used antifungal agent, produces its fungistatic effect by binding to the sterol moiety of the fungal cell wall, but also produces toxic effects to human kidney tubular and bone marrow cells. Since systemic toxicity limits intravenous amphotericin dosage to low I.V. doses, the very small penetrating fraction of amphotericin B into CSF is unable to achieve therapeutic CSF concentrations for use in most fungal infections. A possible exception is seen in cryptococcal meningitis, as this fungus is usually highly susceptible to amphotericin B and may respond to systemic therapy without concomittant intrathecal administration.[21-24] For the bulk of disseminated fungal infections involving the CNS, such as coddidioidomycosis, blastomycosis, histoplasmosis, etc. amphotericin B must be given intrathecally, either by use of hyperbaric glucose solution at the lumbar level, or via direct intracisternal injection or intraventricular administration through mechanical reservoirs or shunts.[25-33] When following such cases, care should be taken to avoid using cisternal or ventricular fluid analysis for therapeutic guidance, as CSF from those two sites may appear deceivingly normal, even when simultaneous lumbar CSF analysis reveals serious abnormalities.[34]

Miconazole, a new parenteral nitroimidazole antifungal agent, has activity against the majority of yeast (e.g., Candida) and many fungi. However, poor CSF penetration even in cases of coccidioidomycosis meningitis, forces intrathecal drug administration. Our personal, albeit limited experience, using this drug intrathecally in coccidioidomycosis meningitis has been generally disappointing.

Many antiviral drugs have been tried against herpes simplex encephalitis,[35-39] but the only unequivocally promising drug is Vidarabine (ARA-A).[40] As of this date, it is now available commercially, but diagnosis of certainty should be established early in the course. Therefore, brain biopsy and immunofluorescent histopathologic diagnosis is strongly recommended. Practically all other CNS viral infections remain presently without effective, specific chemotherapy. Interferon continues to be of interest, especially since European laboratories can now provide higher volumes of costly human cell harvest product. It remains, however, only as of theoretical potential, since solid studies with its use in viral CNS infections are lacking.

Toxoplasmosis of the CNS can be treated quite effectively with the use of both sulphamethoxazole and pyrimethamine. Not uncommonly toxoplasmosis is an unsuspected cause of brain abscess occurring in the aged or immuno-compromised patients, and therefore, neurosurgical aspirate or total removal may occur beforehand.[10,41,42]

Meningoencephalitis caused by amoebic species, usually Naegleria, has a dismal prognosis. Survivors of this very rapidly fatal infestation are extremely rare. Diagnostic suspiciousness is important, especially if the patient is known to have been diving or swimming a few hours or days before onset. Amphotericin "B" should be used vigorously via intrathecal route without delay. Although Metronidazole is active against E. Histolytica, it has been ineffective against Naegleria, but conceivably, both could be used as a heroic measure in this grim disorder.[57]

A comprehensive chart of the antibiotic chemotherapy discussed here is included (Table 1).[55]

The Use of Corticosteroids in CNS Infections

Steroids are widely used in a variety of neurological disorders. In some cases their potent antiinflammatory effects are sought (e.g., brain edema, chemical meningitis, etc.) while in other instances their immunosuppressive actions are desired primarily (e.g., myasthenia gravis, immunological demyelination, various CNS arteritides, etc.). They are widely used in CNS parasitosis,[43,44] but their role in the treatment of viral infections remains controversial. Anecdotal case

Table 1

Bacterial Etiology	Initial Choice	Alternate	Comment
Neisseria meningitis	Penicillin G	Chloramphenicol	Rare penicillin resistant pneumococcus occurs.
Streptococcus pneumoniae	Penicillin G	Chloramphenicol	
Streptococcus Groups A, B, C, G	Penicillin G	Chloramphenicol	
Streptococcus Group D (Enterococcus)	Ampicillin	Chloramphenicol Vancomycin	Vancomycin yields marginal CSF levels.
Haemophilus influenzae	Ampicillin	Chloramphenicol Trimethoprim/ Sulfamethoxazole	Some strains may inactivate ampicillin (beta lactamase enzyme).
Staphlococcus aureus	Methicillin	Oxacillin Nafcillin Vancomycin	Check CSF levels of vancomycin vs MIC. S. epidermis frequent in ventricular shunts: Must do MIC's.
Escherichia coli Samonella Proteus mirabilis	Ampicillin	Chloramphenicol Carbenicillin	Systemic and intraventricular gentamicin, trobramycin or amikacin if poor clinical response or organism resists.
Ampicillin resist. Enterobacteriaceae	Carbenicillin Chloramphenicol Amikacin	Trimeth./Sulf. Tobramycin Gentamicin	Base therapy on MIC's. Intraventric. therapy may be necessary. Better suscept. levels with amikacin.
Bacterial abscesses	Chloramphenicol Penicillin	Metronidazole IV (still experimental USA)	Metronidazole likely to become treatment of choice for anaerobic bacteria.
Tuberculosis	Isoniazid Ethambutol Rifampin	Pyrazinamide	Morbidity and mortality diminished significantly if *intrathecal streptomycin* is given early in the course of T.B. meningitis.
Fungal	Amphotericin B 5-fluorocytosine	Miconazole	All except cryptococcus require intrathecal usage of Amphotericin B.
Nocardia	Trimethoprim Sulfamethoxazole	Sulfadiazine	Nocardia and actinomyces may be confused with fungus. Some authors still prefer sulfadiazine and penicillin as first choice drugs.
Actinomycosis	Penicillin	Tetracycline Sulfamethoxazole	CNS "asymptomatic" infection should be suspected when systemic illness is first diagnosed.
Toxoplasma	Pyrimehtamine Sulfamethoxazole		
Herpes simplex	Vidarabine (ARA-A)		Early brain biopsy and diagnosis by immunofluorescence is advised.
Amoeba-Naegleria	Amphotericin B	Metronidazole (?)	Intrathecal Amphotericin B. necessary.

reports where patients responded dramatically do exist, but in many other instances they either showed no clearcut appreciable benefit, or may have even aggravated the disease course.[36,37,45-47]

Due to their immunosuppressive effects they would seem logically contraindicated in the treatment of bacterial, fungal or mycobacterial CNS infections. However, this is not always the case, because the CNS structures are as equally susceptible to those infections, as to violent and sometimes fatal, inflammatory reactions that take place within infected nervous tissues. It is therefore not uncommon to see patients lapse, in a few hours or days, into coma and death, mainly due to explosive brain edema, intense meningitis, vasculitis[48] and hydrocephalus. These patients may respond quite favorably to the simultaneous usage of appropriate antibiotics, and corticosteroids. In this manner their potent early anti-inflammatory actions are exploited in order to gain enough time for the antibiotic action to take place, then tapering the steroid dosage in order to avoid their immunosuppressive effects[49,50,56] Here in the Southwest, it has been our experience in dealing with the highly prevalent coccidioidomycosis, that those rare violently fulminant cases, are best handled by intrathecal amphotericin but in addition, dehydrating agents and corticosteroids are given in high doses for a short period of about ten days until the infection is under better antibiotic control. There is also a general impression here, that with chronic intrathecal amphotericin treatment, the addition of 25 to 100 mgs.

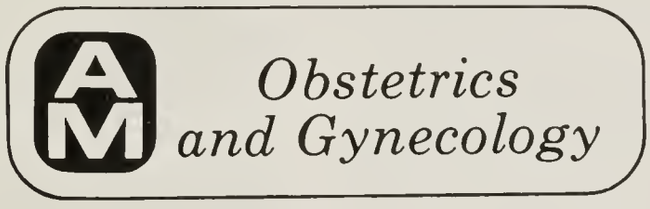
of hydrocortisone dissolved in double distilled water, without preservatives and mixed with the intrathecal injection dose, permits a smoother clinical course with very few side effects and seemingly delaying the appearance of chronic hydrocephalus due to chronic granulomatous and chemical meningitis. This therapeutic approach is presently used chronically on many outpatients, some of which are permanently immumosuppressed due to kidney transplants, but who remain clinically stable many years later and most, without the use of special intracranial shunting devices.[29] CNS coccidioidomycosis deaths are now of rare occurrence here.

Therefore, the use of steroids with the possible exception of viral illnesses, remains a life saving measure in hyperacute meningoencephalitis involving bacterial, fungal, mycobacterial and CNS abscesses when significant edema or impending herniation is clinically apparent. Short intense medication courses are generally preferred to avoid immunosuppression. Intermittent usage in many other chronic meningitis is also of some clinical value.[28,51-54]

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Meconium Staining

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Editors:
Walter B. Cherny, M.D.
Louis Weinstein, M.D.

The average incidence of Meconium Staining among all deliveries is 15%. The primary concerns are:

1. The significance of Meconium as a sign of fetal hypoxia; and
2. The prevention of Meconium aspiration pneumonitis in the neonatal period.

It is apparent that the character of the meconium (quality, color, texture) as well as the time of appearance in labor is important.

Developed sub-groups in the classification of Meconium Staining are:

Group 1 - Meconium is present at the time of rupture of membranes.

Group 2 - Clear fluid initially, with subsequent passage of Meconium.

Group 3 - Meconium present at delivery only

Group 4 - Thick vs. thin Meconium

Perinatal mortality rates, when there is Meconium Staining alone, vary from 4 to 8%. This is 3-6 times higher than perinatal mortality rates for all infants.

Group 1 - Significantly lower 1 and 5 minute Apgar scores than in non-stained infants.

Group 2 - Lowest 1 and 5 minute Apgar scores.

Group 3 - No significant difference.

Group 4. - Thick Meconium Staining -significantly lower Apgar scores.

Neonatal morbidity and mortality is substantially higher when identifiable fetal distress accompanies Meconium before birth.

1. Thin meconium without evidence of fetal distress yields a perinatal mortality 45/1000 (compared to perinatal mortality of 1-2/1000 in comparable group for weight and gestational age.)

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2. Thin meconium with abnormalities of fetal heart monitored intrapartum yields a perinatal mortality 80/1000.
3. Thick meconium with signs of fetal distress yields a perinatal mortality 320/1000.

Meconium aspiration is a serious complication in the neonate. It is evident from the studies of Ting and Brady, Gregory, Strickland and Camello that active treatment of the newborn who has aspirated meconium can reduce the mortality to almost zero, and significantly reduce the morbidity. Appropriate treatment includes naso-pharyngeal suction upon delivery of the head and prior to complete expulsion, immediate tracheal suction and or lavage until meconium is cleared. The known risks of laryngo-spasm and secondary asphyxia, which are treatable, are accepted in view of the seriousness of meconium aspiration and the strong possibility of subsequent pneumonitis. It is therefore recommended that all patients exhibiting meconium staining be immediately identified as high risk, and be actively managed as such.

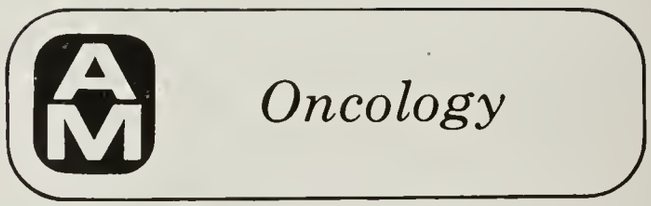
A recent Good Samaritan Hospital audit revealed an incidence of meconium staining of 11.%. Although 72% of all infants born were suctioned upon delivery of the head, surprisingly only 50% of the meconium stained infants received this treatment.

If Meconium Staining should be identified when amniocentesis is done for any reason in the 3rd trimester, the well-being of the fetus should be evaluated. Methods of evaluation could include the following:

1. Fetal maturity studies on amniotic fluid.
2. Non-stress tests (NST).
3. Oxytocin Challenge Tests (OCT).
4. Other tests, if felt indicated, could be serum estroils, and HPL.
5. Delivery if and when indicated by a non reactive NST, a positive OCT or significant (50%) drop in serum estriol levels.

Once Meconium is identified in labor, teatment should include:

1. Continuous fetal monitoring, preferably electronic and internal.
2. Avoidance of conditions known to contribute to fetal hypoxia, i.e.:
 a. uterine hyperstimulation.
 b. maternal hypotension, whether positional or secondary to anesthesia or analgesia.
 c. para-cervical block.
3. Identify and correct, when possible, the reversible causes of fetal hypoxia.
4. Insure adequate maternal hydration.
5. Avoid difficult or traumatic delivery.
6. If problems cannot be corrected readily, consideration should be given to immediate delivery.
7. Immediate naso-pharyngeal aspiration on delivery of the head.
8. Tracheal suction/lavage on completion of delivery.



Adriamycin Heart Disease:
An Update

Bruce W. Dana, M.D.

Editors:
David S. Alberts, M.D.
Ellen M. Chase, B.S.

The cardiotoxic effects of the antitumor antibiotic Adriamycin (doxorubicin hydrochloride) are well known and are particularly unfortunate because they limit the usefulness of this effective antineoplastic agent.[1] Ewy et al[2] summarized initial studies of Adriamycin cardiotoxicity in this column in 1976 and later reported their studies of echocardiography in patients receiving Adriamycin.[3] Since then, considerable further research, both clinical and experimental, has been published which raises the future possibility of preventing Adriamycin heart disease altogether, or, of predicting which patients may safely receive more drug. This review will focus on these recent studies.

The spectrum of Adriamycin cardiotoxicity includes both early and late effects. The early effects (which, fortunately, are quite rare) are those which can occur after a single dose of drug and include acute left ventricular dysfunction, arrhythmias, and myocarditis-pericarditis syndrome.[4] The late effects are due to dose-

From: University of Arizona Health Sciences Center, Section of Hematology and Oncology, Tucson, AZ 85724.

related myocyte injury, manifested as a congestive cardiomyopathy. The myocyte injury is characterized pathologically by two changes: myofibrillar loss and vacuolar degeneration of the myocytes. The amount of injury correlates both with total dose of Adriamycin and with symptoms of heart failure.

Several risk factors for the development of Adriamycin heart disease have been identified. The most important factor appears to be the total dose of Adriamycin received. In early studies, no patients receiving less than 400 mg/M^2 developed heart failure, but 20% of those receiving more than 550 mg/M^2, and 70% of those receiving more than 600 mg/M^2, did. Other factors reported include prior mediastinal irradiation >2000 rads and previously abnormal left ventricular function.[4] The identification of these risk factors has led to the best current means of preventing Adriamycin cardiotoxicity, namely, empirical dose limitation to a total of 550 mg/M^2 for most patients, and lesser doses (e.g., 450 mg/M^2) for older patients or those with a history of prior heart disease or prior mediastinal irradiation. This practice is no different than that recommended by Ewy et al[2] in 1976, although it has become clear in the interim that many patients could safely receive a much higher dose of drug if the development of cardiotoxicity could be predicted.

Prediction of Adriamycin Cardiotoxicity

Since cardiac symptoms related to Adriamycin may develop 60 days or more after the last dose of drug,[5] it is important to prevent cardiotoxicity by history-taking and physical examination during a course of therapy. It is vital to be alert to the symptoms and signs of heart failure during treatment, so that Adriamycin can be stopped promptly and appropriate cardiac therapy instituted. Symptoms like fatigue or exertional dyspnea, which could easily be attributed to the underlying disease, and subtle signs, such as resting tachycardia, may be early findings of drug-induced heart failure.

A decrease in total limb lead QRS voltage during Adriamycin treatment was initially proposed as a means of predicting cardiotoxicity. However, Henderson et al[6] found that although QRS voltage commonly decreased during therapy, it was an unreliable guide for changing treatment, and that approximately 30% of patients would have had Adriamycin unnecessarily stopped if the proposed criterion (greater than 30% decrease in QRS voltage) had been used. Also, Ewy et al[7] found that 19% of their patients had unsuspected pericardial effusions, a fact which would make assessment of voltage changes more unreliable.

Systolic time intervals (phonocardiographic measurement of left ventricular function) and ejection fractions measured by echocardiography, were also serially studied by Henderson et al.[6] These parameters changed in the predicted direction during Adriamycin therapy, indicating progressive ventricular dysfunction. However, if these studies had been used to guide therapy, 23/103 patients, all of whom continued to receive Adriamycin without developing cardiotoxicity, would have had treatment discontinued. In addition, adequate echocardiograms may be unobtainable in 40% of patients, limiting the usefulness of this test.

The new technique of radionuclide angiocardiography, wherein cardiac ejection fractions can be accurately determined by counting the activity of a radionuclide in the blood as it passes through the heart, was used in patients receiving Adriamycin by Alexander et al.[8] In their study, five patients who had absolute declines in ejection fraction of 15%-22%, and in whom Adriamycin was continued, developed congestive heart failure. Six patients with similar declines in ejection fraction, but in whom Adriamycin was stopped, had no further fall in ejection fraction and did not develop heart failure. These data suggest that this technique may be able to predict cardiotoxicity before irreversible changes occur, as well as to predict which patients may safely be given higher doses.

Finally, the Stanford group[9] reported that pathologic examination of myocardial tissue obtained by endomyocardial biopsy was a much more sensitive means of determining Adriamycin-associated damage than non-invasive studies. Three of six patients with abnormal systolic time intervals were safely given more Adriamycin after endomyocardial biopsy did not reveal severe damage. Clearly, this technique has limited application at the present time but may be useful in the future in predicting which patients can receive very high dose therapy.

Currently, no single parameter can accurately predict either which patients will develop adriamycin cardiotoxicity *or* at what point in treatment. The safest approach remains empirical dose limitation.

Prevention of Adriamycin Cardiotoxicity

New approaches to the prevention of cardiotoxicity include alteration of dose schedules, development of less cardiotoxic anthracycline congeners, and discovery of agents to block the pathophysiologic mechanism of damage.

Both the Central Oncology Group and the Western Cancer Study Group have reported that adriamycin given in weekly doses, rather than the more common 21-day schedule, is associated with a much lower incidence of cardiotoxicity. None of 74 patients who received ≧550 mg/M^2 of Adriamycin on a weekly schedule developed "definite" evidence of heart failure. Although the newer non-invasive studies of cardiac function were not used, these results remain striking. Others have shown that Adriamycin given by continuous infusion produces only minimal changes on endomyocardial biopsy, even in total doses as great as 840 mg/M^2. It is possible that the lower peak levels of Adriamycin achieved by these schedules are responsible for the decrease in cardiotoxicity, although this has not been proven.

A variety of anthracycline compounds with possibly reduced cardiac side effects are currently under

development. Many of these drugs include modifications of the amino sugar moiety of Adriamycin, which has been thought to be responsible for the cardiotoxicity seen. These new agents include rubidazone, Adriamycin-DNA complexes, and anthracenedione, a Phase I drug currently being tested at the University of Arizona.

Lastly, because of proposals that myocyte injury is produced by free radical peroxidation of membrane lipids, or by depletion of co-Enzyme Q10 in mitochondria of myocytes, trials of free radical scavengers like alpha-tocopherol and N-acetyl cysteine, and Co Q10 repletion have been reported. Each of these appears to reduce cardiotoxicity in experimental animals. A recent report suggests that histamine and catecholamines mediate Adriamycin cardiotoxicity in rabbits. Complete histaminergic and adrenergic blockade of the animals prevented the development of cardiotoxic lesions.

Conclusions

Much progress has been made since 1976 in our understanding of the mechanism of Adriamycin heart disease, as well as its prediction and possible prevention. The only proven means of avoiding toxicity, however, remains the same as that recommended in 1976: limitation of total Adriamycin dose to 550 mg/M^2 in most patients, and to 450 mg/M^2 in patients with prior mediastinal irradiation or those more than 70 years of age. In patients with prior congestive heart failure, the drug should probably be avoided completely.

In the next few years, routine non-invasive cardiac monitoring of patients receiving Adriamycin or simple adjunctive drug treatments to prevent cardiotoxicity may expand the clinical utility of this already highly useful agent.

Acknowledgement

The author would like to thank Dr. Stephen Jones and Dr. Gordon Ewy for reviewing this manuscript.

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Glaucoma

Robert Rubenzik, M.D.

Editor:
Robert Rubenzik, M.D.

Glaucoma is the cause of approximately 15% of all blindness in adults in the U.S. It is stated that one in every 40 people over age 40 has the disease. It is probably more correct to state that although these people have intraocular pressures which are higher than 22 mm Hg, only a small proportion of them will sustain visual loss from glaucoma. Since blindness from glaucoma can be prevented if detected early, we should all be aware of its signs.

The visual loss in glaucoma is due to ischemic necrosis of the optic nerve head. This is usually due to increased intraocular pressure, but may also be due to decreased perfusion of the nerve as seen in hypotensive states and in occlusive vascular disease.

The intraocular pressure represents dynamic balance between the formation and the drainage of aqueous humor. The aqueous is formed by the cilary body, flows through the pupil, and is drained into the venous circulation via the trabecular meshwork which surrounds the anterior chamber (Figure 1). The mechanisms which control the rate of aqueous formation and the peripheral resistance in the trabecular meshwork are unknown.

Chronic open angle glaucoma is much more common than the acute angle closure variety. Either can occur at any age, but they are both more common past age 40. Glaucoma in infants may present signs at birth or may develop at any time up to age two or three. In infantile glaucoma, the eyeball distends and becomes enlarged (buphthalmos). Infantile glaucoma is not as common as the adult variety.

From: 3201 West Peoria, Ste D-802, Phoenix, AZ 85029.

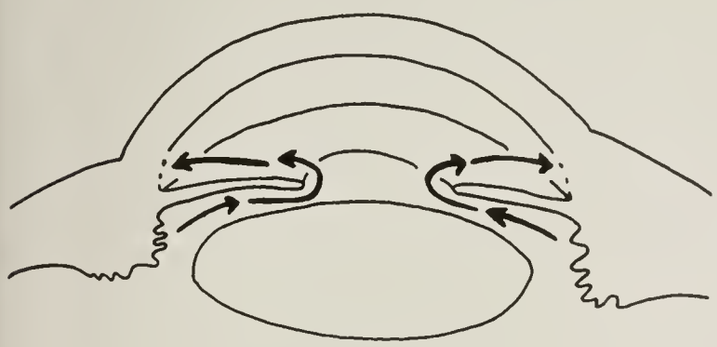


Figure 1
Cross section of anterior chamber and lens of a normal eye. Arrows show flow of aqueous from ciliary body (behind iris) through pupil, and into the trabecular meshwork.

In chronic open angle glaucoma, the aqueous has free access to the trabecular meshwork, as shown in Figure 1. The resistance to outflow of aqueous is located in this drainage apparatus. The elevation in pressure is proportional to the degree of resistance. This disease is relatively asymptomatic, and many progress to blindness without causing discomfort. If the pressure is high enough, the patient may experience pain, but this is not common. The visual acuity is usually normal.

The appearance of the optic disc is characteristic (Figure 2). The atrophy due to glaucoma is usually referred to as "cupping," since the concavity within the substance of the optic nerve head tends to increase in size. This central cup is depressed below the surrounding tissue and is pale. As the "cup" increases in size, the rim of normal neuronal tissue surrounding it undergoes atrophy. As the glaucomatous cupping progresses, the disc appears to grow atrophic.

The most reliable way to accurately measure the intraocular pressure is with the applanation tonometer (Figure 3). This instrument is used in conjunction with the slit lamp; a topical anesthetic is necessary, since the head of the instrument contacts the cornea. The older Schiotz tonometer (Figure 4) may also be used, but the readings are less accurate than those obtained by applanation tonometry.

In a normal population most eyes exhibit an intraocular pressure between 10 and 20 mm Hg. The ability of a given eye to withstand a given level of intraocular pressure may not be normal for one individual, whereas for another the eye may not tolerate pressures well under 20 mm Hg. ("low tension glaucoma").

An occasional person will develop the characteristic optic nerve and corresponding visual field changes of glaucoma in spite of repeatedly normal pressure measurements. This may be due to factors such as low arterial perfusion pressure supplying the optic nerve,

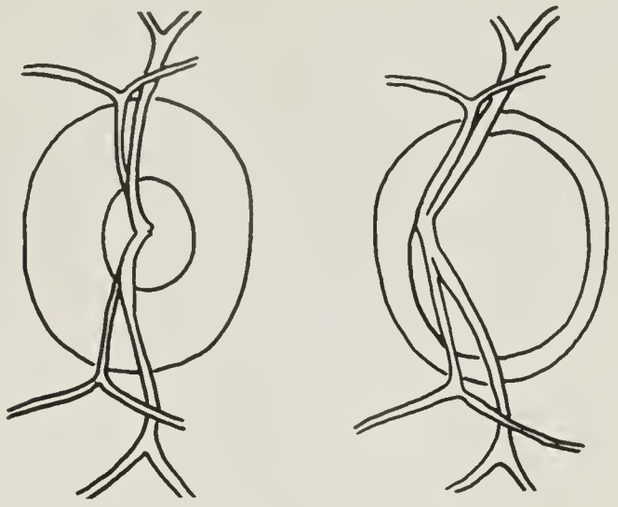


Figure 2
Optic disc changes in glaucoma. Left: The normal cup occupies only a small area in the substance of the disc. The rim of neuronal tissue is wide. Right: Typical glaucomatous atrophy. The cup occupies much of the disc and only a thin rim of nerve fibers remains.

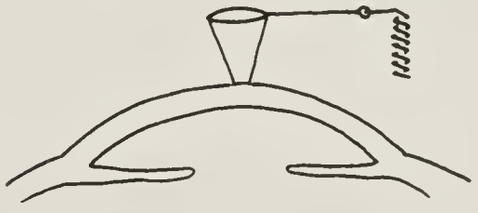


Figure 3
The applanation tonometer flattens a minute area of the cornea. The pressure (provided by a spring within the tonometer) needed to flatten a constant-sized area is proportional to the intraocular pressure. This technique requires the use of the slit lamp and topical anesthetic.

variable intraocular pressures perhaps higher during the night, or perphaps a mass lesion producing a progressive unilateral optic atrophy. At any rate, to diagnose glaucoma on the basis of borderline pressure readings alone can be erroneous; correlation with funduscopic findings is required. In general, any patient found to have intraocular pressures in excess of 21 mm Hg and/or suspicious cupping of the optic discs should be sent to an ophthalmologist for evaluation.

Glaucomatous optic atrophy gives rise to a characteristic visual field defect (Figure 5). This defect corresponds exactly to the arcuate shape of the nerve

fibers in the retina which have become atrophic at the edge of the disc. The scotoma usually extends superiorly or inferiorly from the blind spot, arching around the point of fixation and ending in a straight horizontal line on the nasal side of the field of vision, corresponding to the temporal raphe of the nerve fibers in the retina.

As the disease progresses, so does the destruction of vision. Central vision, however, is usually retained until the disease is advanced. This is why patients are often unaware of visual loss until they are practically blind.

The treatment of open angle glaucoma is primarily medical. Surgery is advised only if field loss progresses in spite of maximum medical therapy. Medical treatment lowers the intraocular pressure by decreasing the

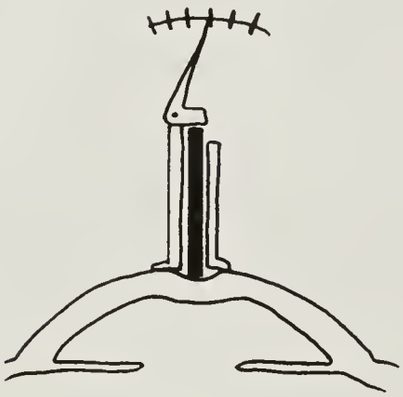


Figure 4

The Schiotz tonometer utilizes a weighted plunger (shaded) which actually indents the cornea. This displaces an appreciable volume of fluid within the eye and is not as accurate as the applanation tonometer.

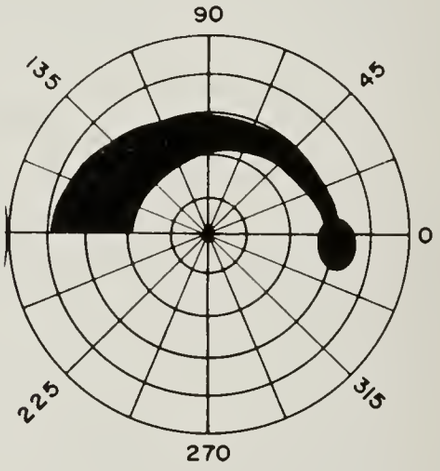


Figure 5

The characteristic field defect in glaucoma. If the nerve fibers at the inferior edge of the disc are damaged, a corresponding superior field defect, such as this, develops. The scotoma crosses the vertical midline and ends in a sharp horizontal border nasally, corresponding to the termination of the nerve fibers in a lateral horizontal raphe.

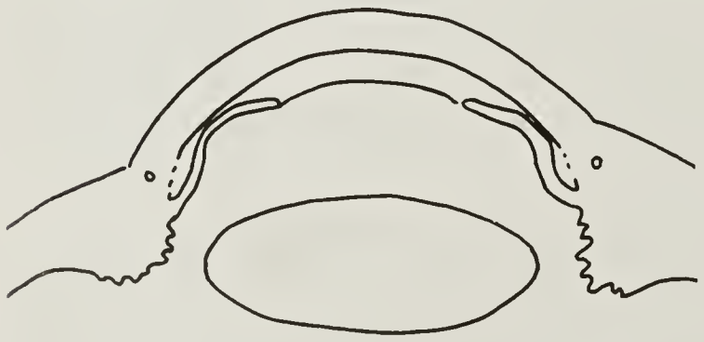


Figure 6

Angle closure glaucoma: The iris is bowed anteriorly, sealing off the drainage area from the interior of the eye. Introcular pressure rises rapidly and presses the iris more firmly against the cornea. Adhesions may form between the iris and the cornea if the attack is not relieved promptly.

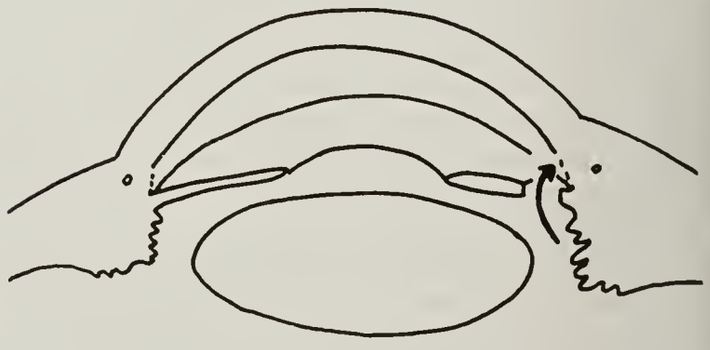


Figure 7

The mechanism of the action of peripheral iridectomy. The arrow deomonstrates the flow of aqueous through the iridectomy into the anterior chamber. This equalizes the pressures across the face of the trabecular meshwork to the flow of aqueous.

resistance to aqueous outflow and by inhibiting the formation of aqueous. Miotics are frequently prescribed, such as pilocarpine (parasympathomimetec) or phospholine iodide (anticholinesterase). This type of topical ophthalmic drug is often successful in lowering the intraocular pressure, but side effects, such as GI hyperactivity due to the cholinergic action, are sometimes seen. In addition, patients using organophosphate cholinesterase inhibitors have decreased serum pseudocholinesterase activity and may undergo prolonged apnea following administration of succinylcholine during general anesthesia. Anticholinesterase agents, such as isoflurophate (DFP), echothiophate (Phospholine Iodide) or demecarium bromide (Humorsol) should be discontinued two weeks prior to the use of depolarizing agents such as succinylcholine.

Epinephrine is often used to reduce aqueous production. It is applied topically and is often synergistic in its effect when combined with miotic therapy. Conjunctival irritation is common, while systemic effects due to sympathetic stimulation are not.

Timolol (Timoptic) is a relatively new anti-glaucoma agent. It is a beta-blocker, analagous to Inderal. When used topically, it is often effective. But side effects, such as bradycardia and exacerbation of obstructive pulmonary disease, are sometimes seen.

Orally administered carbonic amhydrase inhibitors, such as Diamox, Daranide, and Neptazane will inhibit aqueous formation. The effect of these agents is directly upon the eye, and not secondary to their diuretic effect.

Electrolyte imbalances, metabolic acidosis, and the production of renal calculi are side effects of long-term use of these agents.

Narrow angle glaucoma is a separate and distinct disease. It is not nearly as common as open angle glaucoma. In this disease, the aqueous outflow channels are anatomically narrow. The pressure remains normal as long as the iris remains away from the posterior surface of the cornea. If the iris floats forward, it seals off the drainage area and the intraocular pressure rises rapidly (Figure 6). This gives rise to acute pain, ocular congestion, corneal edema, and occasionally severe nausea and vomiting.

The treatment of narrow angle glaucoma is surgical. Medical therapy should be used only to abort an acute attack or to prevent one until surgery is feasible. Peripheral iridectomy is usually effective (Figure 7). Miotic drugs, such as pilocarpine, constrict the pupil, pulling the iris away from the posterior surface of the cornea, allowing the aqueous to reach the drainage apparatus. To quickly lower a dangerously high intraocular pressure, glycerol may be given orally in a dose of 1cc/kg (50% solution in juice or water). When the pressure has dropped into the normal range (30 minutes) miotics may be used to keep the pupil constricted and the angle open until surgery can be performed.

Psychiatric Disorders

Biofeedback Relaxation Therapy:

What is it? Who Does it Help?

Muriel Sieh, M.S.W.

Editor:
Thomas E. Bittker, M.D.

Psychosomatic illness is acknowledged by many physicians as the cause of a large percentage of human ailments. The Greens, in the research department of the Menninger Foundation of Topeka, Kansas logically determined that if psychosomatic disease existed then psychosomatic health existed also.

In 1965, the Greens developed a research program using specially designed machines they had devised whereby people could *see* how their body function can be changed by relaxation. For two weeks 33 people were trained, during which time physiological variables were measured. With the use of electronic equipment attached to the subjects, immediate changes in the vital signs were seen by the subjects as they relaxed. The Greens felt the results of their research clearly indicated that volition was involved in the psychosomatic domain. The training is thought to be a self-suggestive one, helping the unconscious mind or brain move toward its goal; the instrumentation gives instantaneous feedback of the internal physiological state so that the patient knows to what extent he is succeeding.

From: Camelback Professional Building, 5051 North 34th Street, Phoenix, AZ 85018.

Biofeedback is most effective for those who believe they have the ability to control their own bodies. Insomnia sufferers can find relief by learning to relax and lose their fear of insomnia. Excessive muscle bracing can cause headache, fatigue, backache, gastrointestinal and cardiac symptoms, insomnia, hypertension, and sexual dysfunction. These disorders can be reduced or eliminated with the skills of conscious control of body functions learned by a biofeedback patient. He learns the difference between misdirected or efficiently-used muscle energy and trains himself to discriminately direct his energies in his normal daily activity.

People with chronic pain who learn and practice Biofeedback relaxation techniques find that neuromuscular tension reduction has significant results with lower back problems, asthma, and hyperventilation. When anxiety is reduced, actual pain experienced is reduced.

There can be decreased dependence on medication as the patient takes more responsibility for his own health. Biofeedback is concretely valuable in aiding a person to take responsibility for the development of improved mental and physical health.

It would be best for psychotherapy to preceed Biofeedback training when a patient is agitated, acutely depressed, or involved in a major situational crisis. The patient has to be aware of the chain of behaviors that led to the symptoms, as well as know how to deal with the symptoms. Thus, patients move from a symptom-reduction approach to working on resolving their own internal conflicts and gaining deeper insight into the dynamics creating the problems in the first place.

How is equipment used in Biofeedback? A muscle training machine, known as the Electromyograph, shows the activity level of a given muscle which is under the electronic sensors. This machine enables patients to see and "hear" their bodies relax. As the patient relaxes a meter on the machine moves downward and a sound is emitted which becomes lower and quieter as the patient goes into a deeper state of relaxation. Temperature is monitored by thermistors. By attaching a delicate electronic thermometer to the hand, the patient becomes aware of small temperature changes and can learn to voluntarily warm or cool his hands. When skin response (sweating) is monitored by a Galvonic Skin Response machine, the patient becomes aware of subconscious conflicts especially if the patient is saying one thing and his body is responding differently.

Biofeedback Therapy takes only a few weeks of training with Biofeedback equipment several times a week and practicing at home. A written set of instructions explain how to practice at home two or three times a day for ten to fifteen minutes each time. Before long, thought concentration improves greatly because Biofeedback patients learn to exclude tension-producing thoughts. A successful Biofeedback patient learns to recognize tenseness, heightened irritability, and depression as warning signals and self confidently gives commands to his body to relax to avert the symptoms that have caused him so much anxiety or illness in the past.

Anxiety, extreme tensions, and disease can make lives miserable. There is now available a technique that can offer relief. If patients can make themselves sick, Biofeedback Relaxation Therapy is one of the tools that can be used to make them well. Economically Biofeedback Therapy can be cost effective, if one takes into consideration the costs of medical care for the "worried well" and the diminished productivity that results therefrom.

Radiology

Case of The Month No. 42

Right Upper Quadrant Mass: Evaluation by CT

Randall H. Stickney, M.D.
Gerald D. Pond, M.D.

Editor:
John C. Bjelland, M.D.

A 58 year old man with abdominal pain of several weeks duration underwent a barium enema. The scout film for this examination demonstrated a mass with calcification in the right upper quadrant. A subsequent urogram localized the lesion to the upper pole of the right kidney. A contrast enhanced CT scan was obtained for verification of the probable urographic diagnosis. (Figure 1). The CT scan confirmed the diagnosis and provided helpful *additional* information.

1. What is the mass? (Large black arrow).
2. What abnormality is indicated by the white arrow?
3. What abnormality is indicated by the small black arrow?



Figure 1

From: University of Arizona Health Sciences Center, Department of Radiology, Tucson, AZ 85724.

Turn page for diagnosis →

Diagnosis: Hypernephroma
With Tumor Thrombus of the Inferior Vena Cava and Metastatic Retroperitoneal Nodes

The right kidney is extensively involved by a solid mass with areas of calcification (large black arrow). Metastatic extension into the paracaval nodal group is present (small black arrow).

The inferior vena cava (white arrow) is distended and does not enhance as compared to the nearby aorta. These findings are consistent with tumor thrombosis and node metastases secondary to a hypernephroma. Inferior venacavography verified IVC occlusion by tumor thrombus (Figure 2). Note the massively dilated collaterals.

CT findings which may be seen in tumor thrombosis of the IVC include 1) gross enlargement of the lumen size of the vessel, 2) irregularity of the lumen, and 3) failure to "light up" with contrast enhancement.

From 9 to 33% of hypernephromas have extension into the inferior vena cava at time of diagnosis.[1,2] The prognosis is adversely affected by the presence of tumor thrombus in either the renal vein or inferior vena cava.[3] An increasing number of renal neoplastic extensions are being documented and evaluated by CT scanning.[4,5]



Figure 2

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Special Article

Pedalcycle Traffic Accidents in Tucson, Arizona

A Preliminary Report

Michael J. Halek, M.S.
Linda Webster, M.S.
John H. Hughes, M.D., FACS

Abstract

Exposure of pedalcyclists to highway trauma has increased in this decade and may increase further. In order to examine the common characteristics of pedalcycle accidents in one community, an epidemiologic analysis of 174 pedalcycle accident reports in Tucson, Arizona in 1977 was conducted. Our study indicates that the most frequent hazard involves bicycle/motor vehicle collisions occurring at intersections. Efforts to reduce such accidents should include public education, continued efforts in the design of pedalcycles and contact points of motor vehicles, increased use of protective devices, and study of modification of traffic intersections to reduce the hazards of these areas.

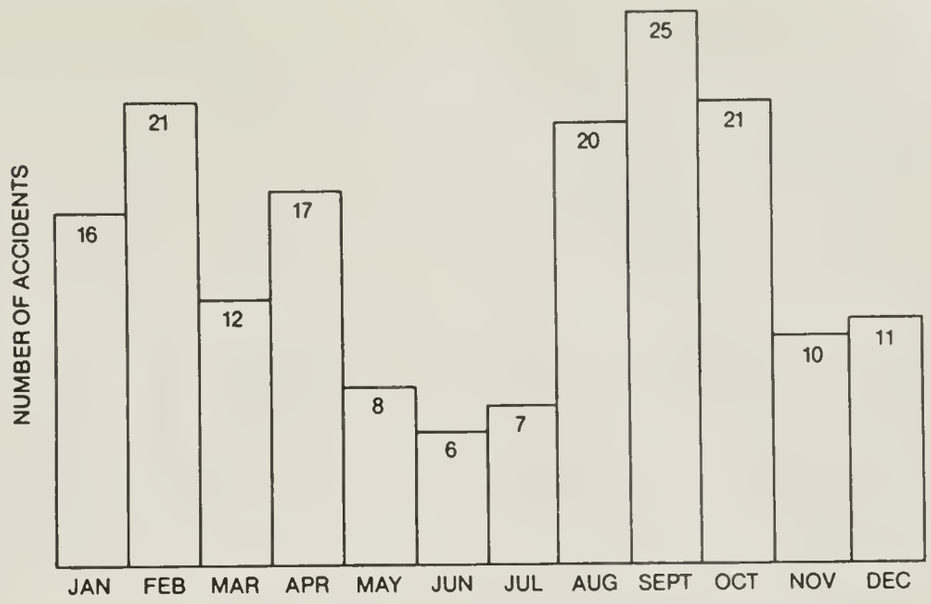


Figure 1
Number of Bicycle Accidents by Month - 1977*
**Tucson Police Department, 1977*

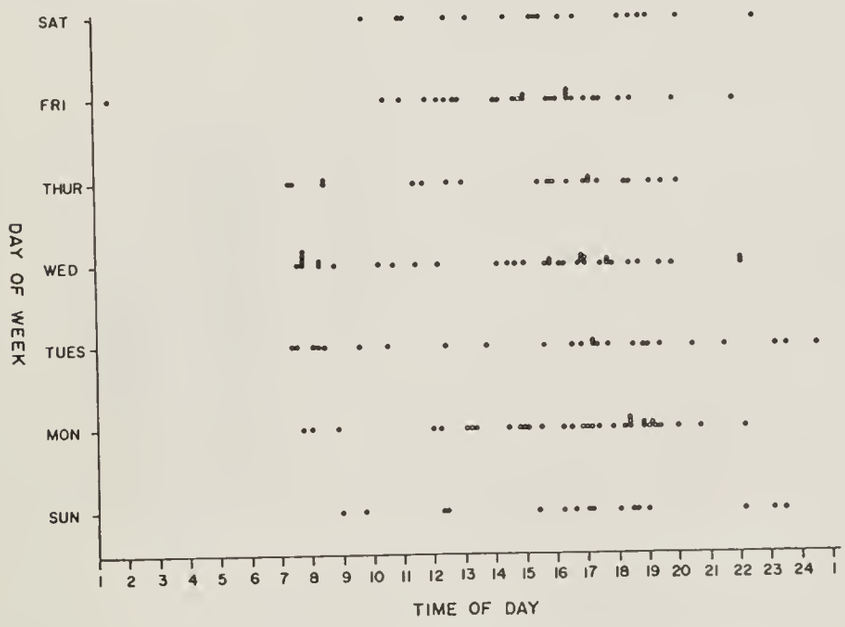


Figure 2
Number of Car/Bike by Time of Day, Day of Week
**Tucson Police Department, 1977*

While trauma is the leading killer of young Americans with highway accidents the major cause, greatest emphasis of study has been on automobile accidents. Rising petroleum costs, a growing interest in exercise, and advancements in cycle technology have led to an increase in the number of pedalcycles on public highways in this decade. According to park and recreation department statistics[1] in 1969, bicycling had some 67 million participants. In 1977, the Bicycle Manufacturers Association[2] estimated that there were 100 million bicyclists in America. Adding to this the significant use of adult three wheel pedalcycles, tandem (two-seater) bicycles, children's bicycles and tricycles, and mopeds, the potential for accidents involving cyclists has dramatically increased.

As an initial study, we have examined the epidemiology of pedalcycle accidents in metropolitan Tucson, Arizona in 1977 in order to determine the circumstances surrounding such accidents and to identify areas amenable to specific preventative measures.

Description of the Problem

In order to examine the pattern of pedalcycle accidents in 1977, the traffic accident reports available from the Tucson Police Department were analyzed. Out of 174 pedalcycle accidents reported, 169 involved pedalcycle/motor vehicle collisions. There were two collisions involving mopeds and two involving tricycles. The number of accidents by month are depicted in Figure 1 showing a higher occurrence in late summer and fall coinciding with the beginning of the school year. The number of car/bike collisions by time of day and day of week is shown in Figure 2, indicating fewer collisions on weekends in spite of increased recreational use of pedalycycles at that time. Peak hours of pedalcycle accidents group around 8:00 a.m. and 4:30 p.m. corresponding to peak

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Figure 3
Bicycle Traffic Density in Tucson*
(Average Daily Count)

Streets Adjacent to the University of Arizona Campus:

Street #1	1003 Pedalcyclists
Street #2	460Pedalcyclists
Street #3	1051 Pedalcyclists
Street #4	759 Pedalcyclists

Streets in Outlying Residential Areas:

Street #5	1250 Pedalcyclists
Street #6	183 Pedalcyclists
Street #7	593 Pedalcyclists
Street #8	67 Pedalcyclists

**April 18-28, 1977 (Monday-Thursday) Tucson Traffic Engineering Division.*

commuter vehicle load. This suggests that pedalcycle accident frequency is somewhat dependent on motor vehicle traffic volume.

According to statistics provided by the Pima Association of Governments, in 1977 approximately 450,000 persons made an estimated 1.44 million trips daily in Tucson. Of these, 82.1 percent were by personal motor vehicle, 2.2 percent were by mass transit, 3.1 percent were by pedalcycle, 6.5 percent were as pedestrians, and 6.1 percent by motorcycle, taxi, or other vehicle. According to the City of Tucson Transportation Engineering Department in 1977 there were 1,168 miles of paved streets of which 530 miles were arterials, highways, and interstate freeway. The remaining 638 miles were composed of residential, university, and central business district streets. There were also 47 miles of unpaved streets, and 700 miles of alleys. There was one public transit system in the Tucson area carrying about 33,000 passengers daily on 208 miles of routes. There were 375 miles of sidewalks and 65 miles of designated bikeways in 1977. An estimate of bicycle volume of traffic was obtained at eight locations surrounding the University of Arizona campus and in outlying residential areas of Tucson in 1977. Actual counts were done by the Traffic Engineering Division between April 18th and April 28th. Counts were taken in good weather conditions and between Monday and Thursday of each week. These data are shown in Figure 3 and serve only as a crude estimate of the actual bicycle traffic density in Tucson. The bikeway system for Tucson is depicted in Figure 4. Also shown are the major arteries of motor vehicle travel - most carrying an average weekday volume of 30,000-40,000 motor vehicles. The bicyclist is at a high risk whenever at a point on the bikeway system that intersects with one of these main arteries. Bikeways on streets are delineated either by a sign adjacent to the roadway or by a white stripe separating the cyclist from major motor vehicle traffic or both.

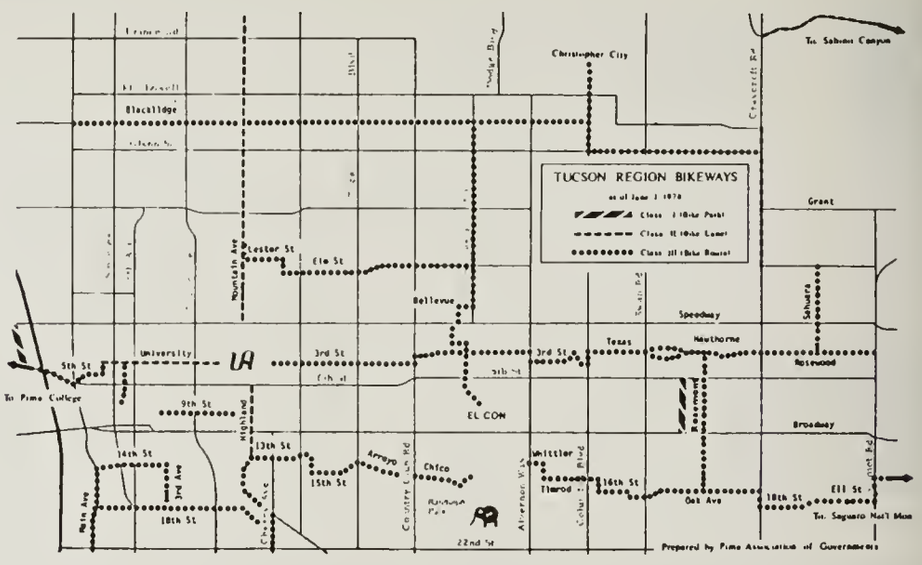


Figure 4
Heavily Traveled Arteries of Motor Vehicle Traffic with Bikeways

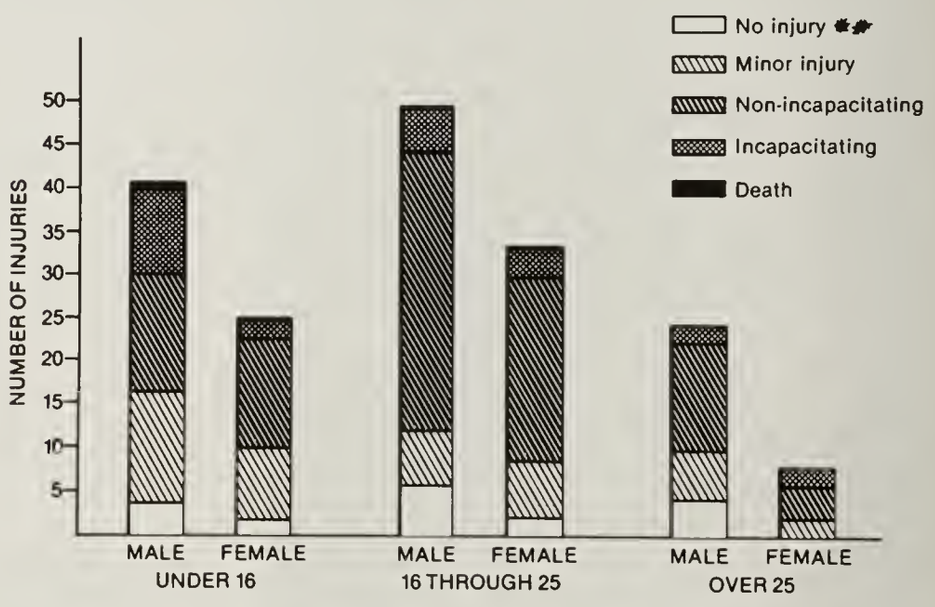


Figure 5
Injuries by Age of Bicyclists*
**Tucson Police Department, 1977*
***No injury indicates a collison report in which the investigating officer and the cyclist determined there was no need to seek medical care.*

Analysis of the location of the accident and the age of the cyclist showed an almost even distribution throughout the city, except for a higher concentration of accidents involving persons between the ages of 16 and 25 in the University area. The age and sex of cyclist related to severity of injury is shown in Figure 5. Exposure data, such as miles cycled for each age group which would permit an assessment of risk is not available.

Figure 6 depicts the relationship of severity of injury to the estimated speeds of the vehicles involved. There does not appear to be a sharp increase in incapacitating injuries as vehicle speeds increase.

Discussion

From national statistics[3-5] it has been stated that non-car/bike collisions account for almost 90% of all pedalcycle accidents. In the present study, only 5 accidents did not involve motor vehicles. It would appear that almost all bicycle accidents not involving motor vehicles are not reported to the police, thus limiting the analysis of accident characteristics.

Age appears to correlate with safer traffic behavior. Cyclists over 25 are responsible in less than half of their

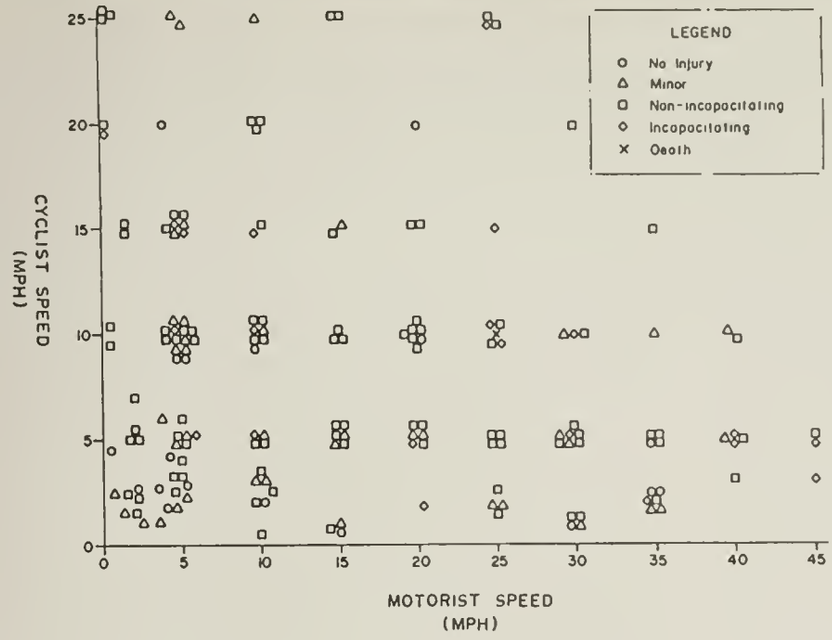


Figure 6
Estimated Speed of Impact*
**Tucson Police Department, 1977.*

collisions (46%) and those between the ages of 16 and 25 were considered responsible for the accident in 47% of the collisions. However, those under 16 were responsible for 84% of the collisions. These figures lend support for early education and training for children in proper traffic behavior. K. Russam[6] reports that traffic safety training for 9 and 10 year olds in England has been effective in reducing traffic accidents involving children in this age group.

In this community over 90% of all reported car/bike collisions took place at either street intersections or the intersections of streets with alleys or driveways. While cyclists express considerable concern regarding possible accidents in which the motorist overtakes the cyclist, this pattern contributed to less than four percent of all car/bike collisions. Of further note, such overtaking collisions occurred mainly at night. Over 50% of the cyclists involved in nighttime collisions did not have lights on their bicycles. In addition, a recent study of traffic flow in metropolitan Tucson done for the Pima Association of Governments by Peat, Marwick, and Mitchell[7] identified that intersections account for the majority of traffic bottlenecks, the greatest number of motor vehicle traffic collisions, and contribute significantly to high levels of air pollution. These data along with our findings regarding pedalcycle accidents are of considerable social concern.

Health and Safety Implications

Through the studies of Gibson[8] and Haddon[9] accident causation has been identified as the transfer of physical energy to the body in sufficient quantity and rapidly enough to damage tissues. Waller[10] has described three situations in which the demands of a task may at least momentarily exceed the performance of an individual and thus cause an accident. First, a person may suddenly or chronically function at a level of performance below the average for most people engaged in a similar task. Second, a task may be continuously difficult or suddenly demand a very high degree of performance skills. Third, a situation may involve a combination of decreased performance of an individual along with increased demand for high performance. This third situation appears to occur in the majority of traffic collisions.

With respect to the post-event circumstances for care of the trauma victim in Tucson, Arizona, a highly sophisticated EMS System has existed here since 1976 with average response time (of paramedics trained with advanced life support skills) of five minutes or less in 1977 and 1978. While continued efforts to refine these skills are being made, greater health benefits may evolve from increased emphasis on the pre-event and event factors contributing to such accidents. Using Haddon's model for injury control[11] proper mechanical condition of both motor vehicles and bicycles and enhanced conspicuousness of cyclists along with cooperative attitudes between all road users should decrease the number of collisions. Skills in evasive vehicle operation during potentially dangerous circumstances can help to reduce the amount of energy transferred in an accident. Programs such as those used in the Netherlands[12] which separate both lanes and time of pedalcycle, automobile, and truck use might be looked at as more satisfactory models. In Tucson, like most cities in the U.S., only a white line separates a bikeway from major motor vehicle traffic. Additionally, the condition of deteriorated paving of the bikeway, foreign objects in the way, and the need for continual repainting of the dividing line limit their effectiveness. Since these factors along with the high occurrence of accidents at intersections have been documented, it would appear that our present attempts at spatial separation of pedalcyclists from major vehicle traffic are relatively ineffective.

The relative proportion of pedalcyclists using city streets and highways will continue to increase in the foreseeable future. Planned integration of non-motor vehicle road users into the current traffic mix should reduce mixed mode conflicts.

Summary

It would be inappropriate to draw broad conclusions based on the present data. Efforts are being made to update this data with 1978 and 1979 statistics. Information regarding product-related injuries is being collected through the Emergency Department of University Hospital which includes data on bicycle accidents. The data presented should increase awareness in clinicians of factors which may be of benefit to their own safety and that of their patients.

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State of the Art

Host Defense Mechanisms in Diabetes Mellitus

Stanton G. Axline, M.D.

Editor:
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Infection and Diabetes Mellitus

It has long been believed that patients with diabetes mellitus are more susceptible to infection than non-diabetic patients and the infections that do occur are more severe. Based on autopsy studies, infections of the urinary tract and soft tissue of the extremeties do appear to occur more frequently in diabetics than in non-diabetics. The increased susceptibility of diabetics to infections at other sites is considerably less certain. However, it is clear that the availability of effective antimicrobial therapy for infections has had a remarkable impact second only to the availability of insulin on the life span of the diabetic patient.

In the pre-insulin era the average life span for a diabetic was 1.5 years after the diagnosis was made. In the post-insulin era before the availability of antimicrobial agents the average life span was seven years after the diagnosis. In the current post-antimicrobial therapy era the life span of diabetics now is nearly two-thirds that of the non-diabetic patient.

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Host Defense Mechanisms in Diabetes Mellitus

The mechanisms by which diabetics may exhibit increased susceptibility to certain infections have been the subject of numerous investigations. Such studies have focused on cell-mediated immunity as well as humoral aspects of host defense mechanisms. Studies of humoral immunity have shown that antibody production is normal in diabetic patients[1] and serum complement (CH50)[2] and properdin activities[3] are either normal or slightly increased. On the other hand, serum bactericidal activity against certain organisms is decreased. Balch and Watters[2] reported that serum from diabetic patients exhibited decreased bactericidal activity against *Staphylococcus albus* but not against a serum sensitive strain of *Escherichia coli*. In the group of 12 diabetics studied, bactericidal activity was reduced a mean of 50% relative to controls. The explanation for these small but statistically significant changes are not known but the authors reported that bactericidal activity was not heat sensitive and there were no correlations between blood glucose or serum acetone concentrations and bactericidal activity.

In contrast to the few alterations in humoral immunity, multiple changes in cell-mediated immunity

have been identified in diabetics. An impressive array of *in vivo* and *in vitro* data from patients and experimental animals have documented impairment of leukocyte mobilization, granulocyte adherence, leukocyte chemotaxis, phagocytosis, and bactericidal activity of polymorphonuclear leukocytes.

Leukocyte Mobilization

Sheldon and Bauer[4] reported that granulocytes from alloxan diabetic rabbits in ketoacidosis showed delayed migration into sites of inflammation. Similar findings have been reported in diabetic patients. Brayton et al,[5] using a modified Rebuck skin window technique, found that leukocytes from diabetic patients showed diminished mobilization as compared to controls. This was felt to be an intrinsic cellular defect since it could not be correlated with uremia or ketoacidosis. Perillie et al[6] performed similar studies and found that leukocyte mobilization was diminished only in diabetics with ketoacidosis. Baciu et al,[7] in a study of juvenile onset diabetics, found diminished leukocyte mobilization that partially improved after insulin administration. Interestingly, moblization was again reduced by glucose infusion.

Granulocyte Adherence

Adherence of granulocytes to vascular endothelium is one of the early steps in the inflammatory process that precedes diapedesis and exudate formation in extravascular tissues. Recent studies have suggested that leukocyte adherence is diminished in diabetes. Van Oss[8] found that blood leukocytes from normal donors showed a dramatic reduction in adherence to glass cover slips when incubated *in vitro* with hyperglycemic (200 mg/dl) serum. More recently Bagdade et al[9] found that polymorphonuclear leukocytes from a group of untreated nonketotic diabetics with a mean fasting blood glucose of 293 mg/dl showed a reduction in their ability to adhere to nylon fibers. After insulin treatment which resulted in a reduction in fasting blood glucose to 198 mg/dl, granulocyte adherence from these patients was improved significantly but was still somewhat less than normal. Adherence values showed an inverse linear correlation with fasting blood glucose concentrations. The authors concluded that glucose concentration was the most important factor in reducing adherence. This was suggested by 1) the observation that adherence in diabetic patients showed an inverse relationship to fasting blood glucose levels and 2) adherence of granulocytes from normal patients was reduced after incubation in hyperglycemic serum.

Leukocyte Chemotaxis

Mowatt and Baum[10] examined carefully the chemotactic activity of polymorphonuclear leukocytes and found that the chemtactic index for diabetic patients was significantly less than that for age-and sex-matched normal non-diabetic controls. There was no correlation in the diabetic patients between chemotactic index and age or sex of the patient, nor was there any correlation in the diabetic patients between the chemotactic index and the use of insulin versus oral hypoglycemic agents, fasting blood sugar, serum carbon dioxide, or blood urea nitrogen concentrations. The chemotactic index of normal patients whose leukocytes were incubated in concentrations of glucose ranging from 300-900 mg/dl remained within normal limits. In diabetic patients there was no correlation between the chemotaxis of polymorphonuclear leukocytes and plasma insulin concentration. Mowatt and Baum[10] were unable to correlate the chemotactic index with any of the usual criteria employed to assess diabetic control. Specifically, they could find no further impairment of leukocyte function in patients with severe ketoacidosis. Hill et al[11] and Miller and Baker[12] reported impairment of leukocyte chemotaxis in patients with juvenile onset diabetes. In a provocative study Molenaar et al[13] suggested that impairment of leukocyte chemotaxis may be genetic in origin. They found that the chemotactic index of insulin treated diabetic patients as well as their non-diabetic first-degree relatives (parents, siblings or children) was reduced relative to controls. There was no correlation between chemotactic index and age, sex, weight, plasma insulin concentration, insulin antibodies, or plasma glucose.

Phagocytosis

There are conflicting data regarding phagocytic activity of granulocytes in diabetes. In an early study Marble[14] reported that polymorphonuclear leukocytes from well controlled diabetics showed normal phagocytosis of beta hemolytic streptococci. Cohn[15] observed that inflammatory peritoneal exudate cells from alloxan diabetic rats phagocytized staphylococci normally. In a similar vein Briscoe and Allison[16] reported that exudate leukocytes from nonketotic diabetic rats showed normal phagocytosis of Type I pneumococci.

In contrast to the studies showing no impairment of phagocytosis in diabetes, Baciu[7] reported diminished phagocytosis in diabetics which was reversed by insulin treatment. More recently Bybee & Rogers[17] reported that circulating blood leukocytes from diabetics with ketoacidosis showed diminished phagocytosis of staphylococci. However, leukocytes from diabetics without ketoacidosis phagocytized normally. Incubation of normal leukocytes in ketotic serum did not diminish phagocytosis suggesting that the reversible impairment was cellular in origin.

In contrast to studies suggesting a cellular defect in phagocytosis associated with diabetes, several investigators have identified humoral changes that results in diminished particle uptake by diabetic leukocytes. Drachman et al[18] showed that inflammatory exudate cells from the peritoneal cavity of diabetic rats phagocytized pneumococci at a reduced rate when the assay was carried out in the presence of serum from diabetic rats. Incubation in normal rat serum reversed the impairement and conversely, diabetic rat serum depressed phagocytosis by normal as well as diabetic leukocytes. Similarly, Bagdade et al[19] found that

circulating blood leukocytes from non-ketotic diabetics showed a significant reducation in phagocytosis of *Streptococcus pneumonia* as compared to non-diabetic controls. Of special interest was their finding that after insulin treatment, which resulted in a mean drop in fasting blood sugar from 283 mg/dl to 201 mg/dl, phagocytosis of pneumococci returned to normal. Incubation of leukocytes from non-diabetic control patients in diabetic serum resulted in a significant decrease in phagocytosis whereas incubation of leukocytes from diabetics in control serum reversed the phagocytic defect. Further, they found that addition of glucose at concentrations greater than 250 mg/dl to non-diabetic leukocytes in normal serum resulted in diminished phagocytosis. The glucose effects could not be attributed to changes in osmolarity. The latter finding is somewhat in conflict with data presented by Drachman et al[18] who found that glucose as well as equivalent molar concentrations of non-metabolizable sugars caused a depression of phagocytosis. On this basis they suggested that the action of glucose on leukocytes was primarily osmotic.

Because of the diversity in experimental models employed in the studies outlined, methodologic differences, difficulties in extrapolating from one animal species to another, and occasionally direct conflicts in experimental results, it is difficult to formulate a unified description of alterations in host defense mechanisms associated with diabetes mellitus. However, the bulk of data supports a conclusion that leukocyte migration response to chemotactic stimuli and phagocytosis of certain but not all bacteria are impaired. There seems little to support the notion that humoral defense mechanisms are impaired. The most likely explanation for these changes in cellular function are ketoacidosis, hyperglycemia, hyperosmolarity, and perhaps other metabolic concomitants of diabetes. In this regard, the physiologic changes produced by inflammation that play an important role in host defense mechanisms can be altered substantially in diabetes. For example, lactic acid, which accumulates in areas of inflammation, exhibits a significant bactericidal action on tubercle bacilli and staphylococci. However, addition of ketone bodies or organic acids to these bacteria in the presence of lactic acid enhances survival.

In addition to the specific defects in host defense mechanisms outlined above, peripheral vascular disease which often accompanies diabetes, plays a major role in contributing to the increased incidence of soft tissue infections. The likely mechanisms are at least twofold and include a) decreased blood flow which could alter granulocyte mobilization and/or diffusion of humoral factors required for efficient phagocytosis and b) decreased oxygen tension leading to tissue hypoxia or necrosis thus providing a favorable environment for proliferation of microorganisms.

Vascular changes that occur in the kidney of diabetics have also been postulated to play a role in predisposing to urinary tract infections. Most studies have shown that diabetics have increased incidence of bacilluria.[20] This association is particularly striking in patients with vascular disease. However, the exact mechanisms linking microangiopathy to bacilluria have not been clarified.

It is clear from the foregoing review that certain aspects of host defense mechanisms are altered in patients with diabetes mellitus. However, the relative contributions of such identifiable defects to the pathogenesis of the frequent episodes of infections seen in diabetic patients is not clear. It seems likely, however, that current intense research interest into mechanisms of host defense will provide insights of direct relevance to this important medical problem.

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Health and Patient Education at the Arizona Health Sciences Center

A frequent complaint of physicians is that their patients do not follow instructions. A frequent complaint of patients is that they do not understand exactly what they are to do. Health education is involved with narrowing the gap between what the patient understands the physician to say and what is actually said.

The field of health and patient education is involved with the development of planned programs of learning experiences designed to facilitate changes in behavior related to health. Traditionally, health education has been associated with public health functions, such as community screening programs or school health education. During the last decade, however, the increased focus on preventive medicine and the greater involvement of consumers in their own health care has expanded the purview of health education. The term "patient education" is the component of health education in the medical setting, which involves a systematic plan designed to facilitate clear communication with patients about their disease, its complications, the prevention of recurrences, and the management of their lives during disease or illness. The Arizona Health Sciences Center has been developing a variety of innovative approaches to health and patient education.

Family Practice Office

The Family Practice Office of the Department of Family and Community Medicine has a comprehensive patient education program that includes a staffed patient education center and library, development of new patient education materials and programs, and patient education training for Family Practice residents and undergraduate medical students.

The Patient Education Center provides individual and group outpatient counseling by a professional health education staff. Patients are referred to the Patient Education Center with an education prescription from the practitioner. A well-developed charting system encourages good communication among the health educators, the practitioner, and the patient. A library of videotapes, slide-sound programs and pamphlets is also available for patients.

The Patient Education Committee at the Family Practice Office includes family practice residents, medical students, health education staff, and representatives from clinical pharmacy and social services. The Committee is continually revising and updating patient handouts on medical problems commonly encountered in primary care. The Committee structure helps provide for completeness and accuracy of the information given to patients and also serves as a training tool for the development of educational materials appropriate for patient use.

In addition, the patient education staff is involved in teaching patient education to medical students and residents. Undergraduate medical students are given an overview of the field and may elect to take a seminar course in which health education skills are taught through the development of group projects by the medical students. Third year medical students in the Family Practice clinical rotation and family practice residents are given individualized training sessions that teach practical skills in patient education programs in their future medical practices.

Biomedical Communications

The Biomedical Communications Division, one of the most extensive operations of its kind in the country, is involved in the development of training and education programs for medical students, and provides production support services for the health education programs of individual departments of the College of Medicine and University Hospital. Instructional media specialists assist in the production of a variety of media programs, including videotapes, films, pamphlets and other audiovisual materials. The Division offers, in University Hospital, two major health education programs of its own: Channel 2, a closed circuit television station airs health related programs to patients from 10:00 a.m. to 3:00 p.m. each day, and MediCALL, a telephone service, plays recorded messages on a variety of health topics. The Biomedical Communications Division coordinates the hospital education programs.

University Hospital Patient Education

Within University Hospital and its clinics, a number of education services are available to patients.

The Internal Medicine Section of endocrinology offers a comprehensive teaching and educational program to assist diabetic patients to cope with and manage the complicated therapy required to control this illness. The program

explains the history and physical examination and gives careful instructions on diet, urine testing techniques, medication dosages, and identification of signs and symptoms of potential risks. Follow-up visits for reinforcement of information and techniques are required.

The Department of Obstetrics and Gynecology provides prenatal education which includes nutritional screening, subsequent nutrition education, the signs of labor, and coping with the discomforts of pregnancy. This department prepares patient instruction sheets on labor and delivery procedures as well as descriptions of screening techniques (e.g. amniocentesis) used in the OB-GYN Clinic. Family planning education is provided for all the gynecological patients.

The Coronary Care Unit provides a systematic education program for all postmyocardial infarction patients. A patient booklet covering physiology and anatomy, risk factors, diet, medications, complications associated with MI's—"things to ask your doctor"—has been developed. In addition, a teaching guide for nursing staff accompanies the patient booklet to ensure uniformity of information and clear communication techniques.

Well Aware About Health

Project Well Aware is a community health education program using an instrument, the Health Hazard Appraisal, that consists of a battery of diagnostic tests linked with an examination of an individual's health related behavior. The Health Hazard Appraisal is being used to heighten awareness and motivate changes in an individual's habits that are associated with increased health risks. Project Well Aware has been tested in a number of small rural Arizona communities that have limited medical facilities. Under a four year grant from the Kellogg Foundation, the project is currently being examined in two urban clinical settings, a Health Maintenance Organization and a fee-for-service medical practice.

The Arizona Health Sciences Center, as a state resource, has an obligation to develop models of health and patient education. While providing the best possible care for the citizens of Arizona at the Center, the results of these instructions will be the prototypes for other institutions.

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Guest Editorial
An Unhappy Fairy Tale

"The best-laid schemes o'mice an' men
Gang aft a-gley,
An' leave us nought but grief and pain,
For promised joy!"
Robert Burns
"To A Mouse"
Scottish Poet, 1759-1796

Edinburgh, Scotland—This is a fairy tale setting.

I am sitting in a second-floor hotel room in the Hotel Caledonia. As I gaze through the window, I view Princes Street, one of the more picturesque shopping promenades in Europe. In the distance loom two monuments. One is for Sir Walter Scott, the Gothic novelist who wrote *Ivanhoe*. The other is for Robert Burns, Scotland's renowned poet. Across the street, beautiful gardens and a park parallel Princes Street. To the right, Edinburgh Castle, a fairy tale castle if there ever was one, towers over the hotel and the city. Even the name of the hotel, "Caledonia," has a fairy tale quality. It isn't "Camelot," but it's close enough. As long as I'm in this fairy tale mood, perhaps I shall tell one.

A Fairy Tale

Once upon a time, not so many years ago, an Island Nation lay prostrate after a Great World War. Island citizens—weary of strife, improverished, exhausted, and nearly destitute—voted to reject the philosophy of their war leader. This bulldog of a man preached self-reliance, courage, tenacity, and individualism. These qualities, the citizens decided, might be good for war, but not for peace. Instead of individualism, there would be collective pooling of decisions, wisdom, and resources. Because of the perfectibility of man, equality and harmony would reign.

Their war leader warned them of their folly.

"I do not believe in the power of the state to plan and enforce. No matter how numerous are the committees they set up or the ever-growing hordes of officials they emply or the severity of the punishments they inflict or threaten, they can't approach the high level of internal economic production achieved under free enterprise.

Personal initiative, competitive selection, the profit motive, corrected by failure and the infinite processes of good housekeeping and personal ingenuity, these constitute the life of a free society. It is this vital creative impulse that I deeply fear the doctrines and policies of the socialist government have destroyed.

Nothing that they can plan and order and rush around nor forcing will take its place. They have broke the mainspring, and until we get a new one, the watch will not go. Set the people free—get out of the way and let them make the best of themselves.

I am sure this policy of equalizing misery and organizing scarcity instead of allowing diligence, self-interest and ingenuity to produce abundance has only to be prolonged to kill this British Island stone dead."[1]

He spoke well, as a Prime Minister should.

But the citizens did not listen. They would achieve social justice, equality, and security through central planning. One of their great economists, who was later to win a Nobel Prize, predicted social planning would endanger freedom, and would be the road to serfdom.[2]

Still they did not heed. The new leaders nationalized factories, trains, and mines. But their greatest gift to themselves was Free Health Care: Ah, what a beautiful word—"Free." Thereafter no one need worry.

Embarrassing questions, such as "who can pay?", "who shall go to the hospital?", or "who shall live?", need not be asked. Now one could simply ferret out those patients with sickness, care for them and cure them.

There would be less sickness, financial burdens would be lifted, and all would be well. Free care would be brought within reach of the whole population. The care would be universal, comprehensive and without charge. It would be an act of pure generosity—of entitling people to their right of health.

Only a few details needed to be worked out: 1) nationalizing all hospitals, 2) making all doctors government employees; and 3) organizing the system. The latter would be easy. Separate free care into three parts—a hospital service, general practitioners service, and a public health service.

But details would not matter, for given the perfectibility of collective leadership and the citizens' desire to work for the common good, a Great Plan would evolve.

This Plan would be rational, comprehensive, organized, coherent, equitable, and systematic, rather than being left to the vagaries of individualism or to the market place. All collective problems, in short, would be handled rationally for the common good with complete foresight. And the citizens would live happily ever after in good health."

A Week in Scotland

Or at least that is the way it was suppose to be. After spending a week here—visiting hospitals, reading Scottish newspapers, perusing British books and health system, talking to patients and doctors, and watching the televised proceedings of the Conservative Party Conference—in Blackpool, England, I think I can safely say: 1) something has gone wrong with the fairy tale; and 2) health planning is not what it was cracked up to be. As an American physician who believes that no amount of government planning can match the flexibility, choice, and quality of a mixed health system, with a dominant place for private practice, I am hardly an unbiased observer of the health scene here.

Observations on System

Yet, I am sure enthusiasts and critics would agree on these observations on the National Health System:

1. Central health planning has unforeseen consequences. Instead of lessening the demand for health services,

he demand has increased enormously—o much so that rationing must ıccompnay "free" health care. This ·ationing applies particularly to elective ;urgery, which has waiting lists of nonths to years. The waiting list for ıernias, hemorrhoids, gallstones, hip ·eplacements, varicose veins, and onsillectomies has grown by 40 percent n the last two years and now includes ılmost over 750,000 people.[3] Because of ncreased demand, the cost ($18 billion a ·ear) of the NHS strains the national ›udget and has resulted in either cutbacks i.e. hospital building) or charges for ;ervices (i.e. dental services and ;pectacles).

2. A government health service can ıever be totally comprehensive. This lack ›f comprehensiveness goes beyond ·lective surgery. For example, the National Health Service does not provide ·outine physicals, most nursing home ·are for the elderly, screening for disease, ›r enough abortion services (private ›ractitioners perform 60 percent of ıbortions).

3. Private health care is growing in Britain. Two and one-half million citizens ›elong to private health plans; unions and ·orporations (Electrical and Plumbers Trade Union, Birmingham brewery vorkers, London taxi drivers, and IBM ·mployees) have private health plans as a ·ringe benefit; and the number of private ıospitals, now 117, is growing at 10 ›ercent a year.[3] To help the private health ·are along, the Conservative government s going to make private health care ›enefits tax deductible.

4. Most of the people like the National Health Service, yet most of the physicians dislike it. This should come as no surprise, since any "free" government health service inevitably is a politician's dream ınd a physician's nightmare. Poll after ›oll indicates the British public likes the dea of accessibility to general ›ractitioners and the absence of worry of hospital costs. The English, who have had 'to make do" and "queue up" for forty years, are not concerned about quality or efficient care. The following passage, from the *Changing National Health Service*, a book that favors NHS, nicely sums up patients' attitudes:

"The general public like the NHS. But since their attitude is so very unsophisticated, it is not very clear what is liked. It does not seem to be modern efficient care. Most patients seem to be more concerned with externals like communication, friendliness, accessibility and physical comfort than with the quality of examination and treatment. It follows that most patients do not know what is good for them in a medical sense."

As for doctors, their morale is low. As Powell, the Minister of Health in 1966, said, "One of the most striking features of the National Health Service is the continual, deafening chorus of complaint which rises day and night from every part of it. It is a unique spectacle of an undertaking that is run down by everyone engaged in it."

Most of the funds of the service go to hospitals, and therefore the general practitioners, who do not do any work in hospitals, are cut off from training, facilities, and professional stimulus. General practice, particulary in rural Britain, has little appeal, and London has three times more than outlying regions. The lot of the consultant, who works in a hospital is better but not much, for consultants must participate in the bureaucratic decision making. Pay of the average physician is low, less than three times that of a manual laborer, and somewhere between one-third to one-half of European, Canadian, or American counterparts. As a consequence, more physicians are joining Unions and are demanding shorter working hours.

Physicians emigration rates are high, as many as 30 percent of physicians trained in England's medical schools practice abroad.[5] Who replaces these physicians? Indians and Pakistani physicians comprise 75 percent of hospital junior staffs and fill the ranks of general practitioners.

5. The public and the profession have different expectations of what the Service should provide. The public wants amiability, accessibility, and conveniences, and physicians desire better facilities, more sophisticated diagnostic equipment, freedom in decision making, and more efficiency and effectiveness in putting their training to good use. These different expectations led to bureaucratic and managerial conflicts. Physicians feel committee work is a waste of their skills and lowers the quality of care by diminishing the quantity of time devoted to it. Many of the bureaucrats, on the other hand, feel that equality, not quality, is what counts.

These differences in goals led to frequent "directives" to doctors from the Health Ministry. The intent of these directives was to force physicians to comply with the rules. Instead they led to delays, to inefficiencies, and to reorganizations to correct these inefficiencies. By the early 1970s, 625 different organizational bodies, ranging from regional hosptial boards to local health authorities, each with overlapping boundaries of authority and geography, were trying to run the Service. In 1974 the Service was reorganized into 90 area health authorities (AHAs), each responsible for "meeting the total health needs of a defined population."

In addition, this reorganization supposedly unified the hospital, physician, and public health services. This all sounds plausible, but the Service is continuing to suffer a succession of labor disputes, budget restraints, and managerial crises. These events not only remind me of Churchill's words, quoted earlier, but of those of Milton Friedman, the Conserative economist:

"Government can never duplicate the variety and diversity of individual action. At any moment of time, by imposing uniform standards in housing, or nutrition, or clothing, government could undoubtedly improve the level of living of many individuals; by imposing uniform standards in schooling, road construction, or sanitation, central government could undoubtedly improve the level of performance in many local areas and perhaps even on the average of all communities. But in the process, government would replace progress by stagnation; it would substitute uniform mediocrity for the variety essential for that experimentation which can bring tomorrow's laggards above today's mean."

In Britain's National Health Service, a kind of *paralysis by analysis*, and *planning for stagnation* has set in. Every one, of course, has to be a planner to some degree and no one can object to planning in a general sense. But what planners fail to mention is that planning too often is done by those removed from what they are planning, and by those who fail to realize individual creativity, innovation, and choice are necessary for excellence. Too often, "planning" is a euphemism for regulation controlling, and rationing resources and services through committees, forms, and procedures. Too often, planners neglect results, consequences and quality. Instead of achieving equity and access, they commit society to, at best, a competent mediocrity.

6. Hosptials are deteriorating. Fifty percent of British hospitals are of pre-1918 vintage, and more than 70 percent are pre-1948. Even though 55,000 beds were replaced between 1966 and 1975, only a quarter of the total beds are in post-World War II buildings. Hospital construction is now almost at a halt. Even at the peak of building activity, 1966 to 1975, beds were only being replaced at a rate which would have allowed replacement every 55 years.

7. Government health plans, once instituted, are difficult to change. The new Prime Minister, Margaret Thatcher, has introduced these general policies—tight monetary control, reduced government spending, cutting income taxes, raising sales taxes, and reducing government health and welfare services. She plans to do the latter by reducing welfare benefits, by cracking down on foreigner's use of the NHS, by closing

marginal hospitals, by abolishing one of "tiers" of hospital administrators—the local health authorities, by reducing paper work, by reversing the trend towards centralized hospitals, by abolishing maternity grants, by raising pension age for women from 60 to 65, and by having employers pay for the first six weeks of employees' sickness benefits. The Conserative government may cut 10,000 to 20,000 administrative positions from the Service. According to Conservative Michael Carter, "The service has grown fat on an administrative bureaucracy, which instead of getting to grips with its problems, occupied itself with the reorganization of inefficiency."

Will the Health Service be cut? I'm doubtful. To talk in the United Kingdom of cutting Health Services is still tantamount to questioning the virtue of the Queen. The National Health Service is the jewel in the crown of socialism, and, as the labor party spokesmen are fond of saying "must not be dismantled." When Margaret Thatcher raises the prices for dental fees or spectacles, or when she threatens to close day-care centers, she is disdainfully denounced as "Atilla the Hen," presumably because she is disturbing the pecking order of the Health Service bureaucracy.

8. The problems of National Health Service cannot be considered apart from the "English disease"—lack of productivity. Lack of productivity has many roots: Too much state intervention. Expensive welfare programs. Heavy tax burdens (the government takes 60 percent of the national income). Low income (only one percent of Britons earn over $14,000 while the U.S. median income is $13,000). Strident trade unionism. Lack of incentivies (the government confiscates 98 percent of profit). These policies shrink the national income and produce stagnant growth. Little money remains for the Health Service. Trade unions aggravate the productivity problem. At one point a year or so ago, ambulance drivers, orderlies who wheeled patients to surgery, and nurses were on strike. Because of frequent strikes, it sometimes takes seven to ten years to build a hospital. In one hospital I visited, laboratory computer programmers left in a pay dispute three years ago and never returned. Add to these policies and problems an inflation rate of 17 to 20 percent, and you can see why stagnation and drifts that beset the national economy drag down the health system.

Lessons for America

Are the lessons for America? A couple. One, don't expect too much from PL-93-641—the law passed by Congress in 1974 that set up the 205 Health Service Areas (HSAs) in the U.S. Centralized or regional health planning can never efficiently replace local market forces. At least, that law acknowledged that health reform could not be done by government alone since it calls for participation by many non-government groups. Two, maybe America has been smart to have the long debate and delay of National Health Insurance. We have had the opportunity to look more deeply into our own experience with government health programs and to the experiences of other governments. Now, even passionate liberals have dicarded thoughts of complete reliance on the public medical service approach. Skepticism grows among the public about government's ability to deliver on its promises. If my experiences on my recent Scotland trip and on my other four trips to the United Kingdom are any barometer, the public has good reason for its skepticism.

Richard L. Reece, M.D.

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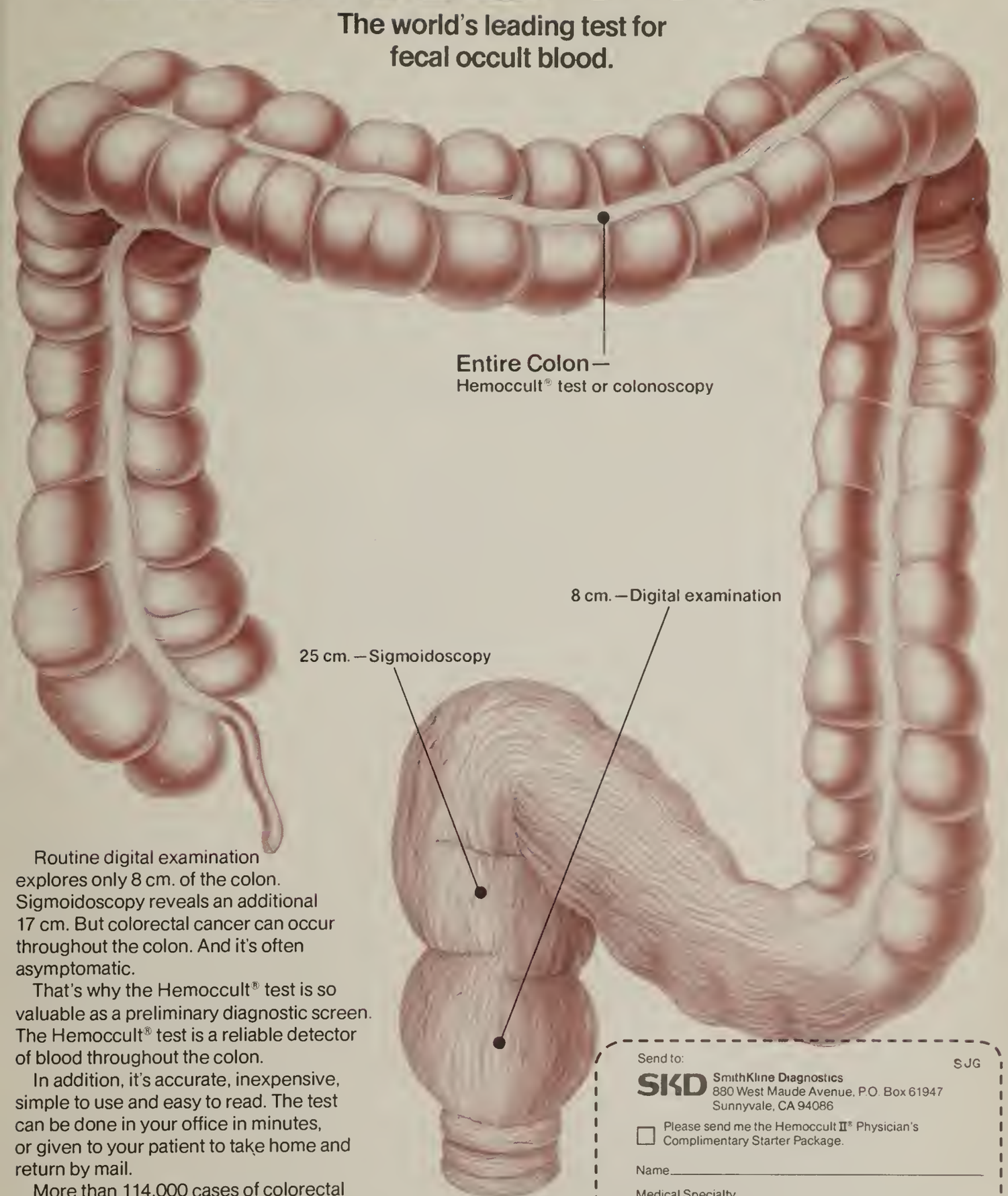
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ArMA Reports

The minutes appearing in this section have been edited to conserve space. A complete copy of the minutes of any meeting will be mailed to any member requesting them.

HEALTH MANPOWER COMMITTEE

Meeting of the Health Manpower Committee of the Arizona Medical Association, Inc. held on Thursday, February 28, 1980, at 810 West Bethany Home Road, Phoenix, Arizona, convened at 6:05 p.m., Laurence M. Linkner, M.D., Chairman presiding.

Nurse Practitioner

The various language changes for amendment of the Nurse Practice Act as it pertains to nurse practitioners proposed and discussed over the past few months between nursing, medicine and legislators were reviewed. House Bill 2370, introduced by Representative Cortwright was also reviewed. Considerable in-depth discussion ensued resulting in the following action:

See Attachment No. 1.

It was moved and carried to approve the language pertaining to Nurse Practitioners as contained in draft dated January 15, 1980, as amended.

7. "Registered Nurse Practitioner" means a person who practices professional nursing as defined in paragraph 5 of this section and who has had additional education and clinical practice as prescribed by the Board of Nursing in its rules and regulations, and who has been authorized by rules and regulations of the Board of Nursing to perform additional acts and tasks recognized by the medical and nursing professions as proper to be performed by a professional nurse. The rules and regulations providing for the Registered Nurse Practitioner shall be approved by the Joint Board of Medical Examiners and Osteopathic Examiners in Medicine and Surgery and shall include:

(a) Requirements for collaboration with, supervision or direction of the Registered Nurse Practitioner by qualified physicians and;

(b) Criteria for the use, prescription and dispensing of drugs and devices developed in collaboration with the Arizona State Board of Pharmacy subject to such limitations as the directing or supervising physician may deem appropriate, and;

(c) Provisions for utilizing Registered Nurse Practitioners to extend the availability of Health Care Services in medically underserved Areas of the State and;

(d) The authorization of such other Medical and Surgical procedures deemed appropriate to be performed by a Registered Nurse Parctitioner.

Physical Therapists

Senate Bill 1167 introduced in the current legislature relating to licensure of physical therapists was reviewed, alon g with proposed language changes as discussed in meetings between representatives of ArMA, orthopedists and physiatrists, and physical therapists. Changes in Paragraph 4 of the "Definitions" section of the bill were discussed - dated February 25, 1980.

It was moved and carried to approve amended paragraph 4 of the "Definitions" as submitted.

See Attachment No. 2.

Attention was called to a paragraph in the bill dealing with educational requirements, and it was pointed out that the AMA Committee which accredits allied education programs could be pre-empted with the wording proposed. A change was therefore suggested as follows:

It was moved and carried to amend paragraph B of Section 32-2022 on Page 5 of Proposed Senate Bill 1167 to read as follows: "The Applicant shall be of good moral character and shall have satisfactorily completed an accredited Physical Therapy Educational Program or Physical Therapist Assistant Program as determined by the Board. Such programs shall conform to the standard of the Committee on Allied Health Education and Accreditation or other official accrediting agencies as determined by the U. S. Office of Education."

Electrologist

House Bill 2393 providing for licensing and regulation of electrologists was reviewed. After some discussion it was agreed that there has not been an indication that there is a threat to the public health due to performance of electrolysis. Unless such a threat is shown to exist, it does not seem necessary to establish a licensing board, accredit schools, etc., thereby adding to the tax burden of the people of Arizona to support additional personnel who would be required to examine the schools, etc.

It was moved and carried to oppose the Bill to License Electrologists.

Senate Bill 1220 to provide for establishment of a Board of Homeopathic Medical Examiners was reviewed. A brief discussion led to the following action:

It was moved and carried to recommend to the Legislative Committee that the position of the Arizona Medical Association on the Homeopathic Bill should be active non-support.

Page 2: Replace lines 7-40 with the following:

4 "Physical therapy" means the treatment of a bodily or mental condition by the use of physical, chemical or other properties of heat, COLD, light, sound, water, AIR, MECHANICAL ENERGY, ELECTRICAL ENERGY, ELECTROMAGNETIC ENERGY AND THEIR NECESSARY PHYSICAL MEASURES, ACTIVITIES AND DEVICES. PHYSICAL THERAPY INCLUDES THE FOLLOWING:

(a) ADMINISTERING AND INTERPRETING TESTS AND MEASUREMENTS ORDINARILY PERFORMED WITHIN THE SCOPE OF THE PRACTICE OF PHYSICAL THERAPY AS AN AID TO TREATMENT.

(b) THE ADMINISTRATION, EVALUATION AND MODIFICATION OF TREATMENT AND INSTRUCTION.

(c) THE PROVISION OF CONSULTATIVE, EDUCATIONAL AND OTHER ADVISORY SERVICES. FOR THE PURPOSES OF THIS SUBSECTION, "PHYSICAL MEASURES, ACTIVITIES AND DEVICES" INCLUDES, BUT IS NOT LIMITED TO, RESISTIVE, ACTIVE AND PASSIVE EXERCISES, WITH OT WITHOUT DEVICES; MECHANICAL STIMULATION; BIOFEEDBACK FOR THE PURPOSES OF NEUROMUSCULAR REHABILOITATION; POSTURAL DRAINAGE; TRACTION; POSITIONING; MASSAGE; SPLINTING; TRAINING IN LOCOMOTION; JOINT MOBILIZATION; OTHER FUNCTIONAL ACTIVITIES WITH OR WITHOUT ASSISTIVE DEVICES, AND CORRECTION OF POSTURE, BODY MECHANICS AND GAIT.

PHYSICIAL THERAPY does not include the use of Roentgen Rays and radium for diagnostoc and therapeutic purposes or the use of electricity for surgical purposes, INCLUDING CAUTERIZATION.

ALL PHYSICAL THERAPY AS DEFINED BY THIS SUBSECTION SHALL BE UPON REFERRAL AND IN CONSULTATION WITH A LICENSED PHYSICIAN AND SURGEON, DENTIST OR PODIATRIST, EXCEPT FOR THOSE SERVICES RELATING TO INITIAL NON-DIAGNOSTIC EVALUATION, SCREENING OR CONSULTATION.

Page 10: Replace lines 6-7 with the following:

3. PRACTICES PHYSICAL THERAPY AND IS NOT LICENSED OR EXEMPT FROM THE REQUIREMENTS THEREFORE PURSUANT TO THIS CHAPTER.

Marital and Family Therapists

Senate Bill 1238 relating to certification

of Marital and Family Therapists was reviewed and discussed. It was generally felt that no real need seems to exist for establishing a board, etc., to certify these people. The same reasons for non-support as were expressed in connection with electrologists would seem to apply.

It was moved and carried to recommend opposition to the Bill which would establish certification of Marital and Family Therapists.

Zone Therapists

After review and discussion of House Bill 2029 providing for licensing and regulation of zone therapists, the committee agreed there is no evidence that the service performed by zone therapists poses a threat to the health of the public which might require regulation. Therefore, the following action was taken:

It was moved and carried to recommend non-support of House Bill 2029.

Medical Radiation Technologists

Memo of February 12, 1980, from Doctor Kossuth pointing out that the AMA has taken a stand opposing FDA's establishment of standards for medical radiation technologists was received for information. The AMA's action precludes necessity for action in the matter by this committee.

Resignation

Resignation letter dated February 5, 1980, from Anthony F. Vuturo, M.D. was received.

It was moved and carried to accept Doctor Vuturo's resignation, and send a letter expressing appreciation for his service. **Future Meetings**

Doctor Linkner stated that a meeting of the committee will be called only if press of business indicates the necessity, and that if single issues arise requiring committee opinion, members will be solicited by mail and are urged to reply in writing.

Position on Allied Health Professionals

It was suggested that consideration be given to development of a paper outlining criteria for determining need for licensure and regulation of allied health professions in general, which might serve as a guideline in reviewing future legislation such as the bills reviewed at this meeting. Committee members are asked to submit suggestions and opinions.

MEDICAL ECONOMICS COMMITTEE

Meeting of the Medical Economics Committee of the Arizona Medical Association held Wednesday, April 2, 1980, at 810 West Bethany Home Road, Phoenix, Arizona, convened at 6:42 p.m., Clyde W. Kurtz, M.D., Chairman, presiding.

1980 Presentation to the Industrial Commission of Arizona

The Committee reviewed drafted presentation to the Industrial Commission of Arizona relative to their medical fee schedule. The presentation requests a change from the 1964 to the 1974 California Relative Value Studies of medicine, surgery, and laboratory procedures. The presentation recommends the Commission continue using the 1975 relative value guide published by the American Society of Anesthesiologists for anesthesiology and the 1973 relative value reference published by the American College of Radiology for radiology services. The presentation further recommends that the Industrial Commission establish its fee schedule for physicians based on the usual and customary concept using billed charge statistics available from Medicare, adjusted for the increases in the physician services component of the Consumers Price Index. The Committee carefully reviewed the presentation to be given at the public hearing to be held April 10, 1980. It was acknowledged that the Board of Directors had approved this approach during thier last meeting, however, the specifics had not been worked out. There was considerable discussion.

It was moved and carried to approve the presentation to the Industrial Commission of Arizona at the public hearing to be held April 10, 1980, by the chairman of the Medical Economics Committee, recommending a change from the 1964 CRVS to the 1974 CRVS for medicine, surgery and laboratory procedures, with continued use of the 1975 Relative Value Guide published by the American Society of Anesthesiologists for Anesthesiology and the 1973 Relative Value Reference published by the American College of Radiology for Radiology Services. The presentation should further recommend to the industrial commission that they establish their fee schedule for physicians based on the usual and customary concept using billed charge statistics available from medicare, adjusted for the increases in the physician services component of the Consumers Price Index. (Copy of the presentation is on file at the Association headquarters offices and is available for review.)

GRIEVANCE COMMITTEE

The meeting of the Grievance Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, April 11, 1980, convened at 6:50 p.m., Richard L. Dexter, M.D., Chairman, presiding.

Proposed Revision of AMA Principles of Medical Ethics

The committee considered the charge to it by the Board of Directors on January 5, 1980, and reviewed and discussed at great length the existing Principles of Medical Ethics, a proposed new set of Principles, a proposed amended version and correspondence from members of the Board of Medical Examiners realtive to the proposed changes, after which, the committee took the following action:

It was moved and carried to recommend to the Board of Directors that the Association support the continuation of the principles of medical ethics as revised in 1957 and presently in existence, with the following modifications: 1) The deletion of the second poriton of Section 3 thereof; 2) the deletion of the last sentence of Section 5 thereof; and 3) the addition of Section 11, setting forth, in essence, the following language: "A physician shall not solicit patients, nor shall a physician advertise in a false, fraudulent, deceptive or misleading manner or advertise the quality of medical service."

Arizona Obligatory Reporting Law

The Chairman addressed the committee regarding the direction of the Board of Directors on January 5, 1980, requesting the committee to review the request of the Physician Rehabilitation Committee concerning amendment of the present statute requiring obligatory reporting of impaired physicians. The committee discussed the wording of the statute, as well as correspondence received from Thomas E. Bittker, M.D., Chairman of the Physician Rehabilitation Committee, and from Stuart M. Gould, Jr., M.D. and, thereafter, took the following action:

It was moved and carried to recommend to the Board of Directors that the Association take no action relative to the recent request of the Physician Rehabilitation Committee relating to a possible amendment of the Arizona Obligatory Reporting Law.

Additionally, however, it was the consensus of the committee that some confusion exists among the medical community relative to the functions of the Physician Rehabilitation Committee and its relationship to the Board of Medical Examiners and the committee

would suggest that the Association, by written communication to its members, provide a descriptive breakdown of the functions of the Physician Rehabilitation Committee and its relationship to BOMEX as well as the wording of the obligatory reporting law.

Future Medical Meetings

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education

Arizona Chapter, American Cancer Society
Arizona Heart Institute
Arizona Medical Association
Arizona State Hospital, Phoenix
Arizona Thoracic Society/Arizona Lung Association
Walter O. Boswell Memorial Hospital Sun City
Camelback Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates, Phoenix
Maricopa County General Hospital, Phoenix
Memorial Hospital of Phoenix
Mesa Lutheran Hospital, Mesa
Phoenix Baptist Hospital & Health Center
Phoenix Indian Medical Center
Phoenix Psychiatric Council
St. Joseph's Hospital & Medical Center, Phoenix
St. Lukes's Hospital & Medical Center, Phoenix
St.Mary's Hospital, Tucson
Scottsdale Memorial Hospital
Tucson Hospitals Medical Education Program, (THMEP) Tucson
University of Arizona College of Medicine, Tucson
Veterans Administration Medical Center, Phoenix
Veterans Administration Hospital, Prescott
Yuma Regional Medical Center

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

JUNE

Aviation Medical Seminar
June 26-29. Adams Hotel, Phoenix, AZ, Sponsor: Federal Aviation Administration. Contact: James Harris (405) 686-4881. Approved for 26 hours of category 1 credit.

Low Back Pain
June 27. W. O. Boswell Memorial Hospital, Educ. Center, Classrooms 1 & 2. Sponsor & Contact: Walter O. Boswell Memorial Hospital, Office of CME, Julius Schwimmer, M.D., 10401 Thunderbird Blvd. Sun City, AZ. Approved for 1 hour of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
June 27-28. Arizona Medical Assn. 810 W. Bethany Home Rd. Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate American Heart Assn. & ArMA. Contact: Carol Turner, ArMA offices. Approved for 16 hours of category 1 credit.

JULY

Advances in Therapeutics
July 11-12. Little America, Flagstaff, AZ. Sponsor & Contact: University of Arizona College of Medicine; Office of CME and Outreach, Tucson, AZ 85724. Approved for 10 hours of category 1 credit.

Advanced Cardiac Life Support Program (Recertification)
July 11. Arizona Medical Assn., 810 W. Bethany Home Rd., Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate-American Heart Assn. and ArMA. Contact: Carol Turner, ArMA Offices. Approved for 8 hours of category 1 credit

Day of Surgery
July 25. Little America, Flagstaff, AZ. Sponsor: Arizona Chapter, American College of Surgeons. Contact: Stephen L. Wangensteen, M.D., Chairman, Dept. of Surgery U of A College of Medicine. Tucson, AZ 85724. Approved for 5 hours of category 1 credit.

Advanced Cardiac Life Support Program (Provider Course)
July 25-26. Arizona Medical Assn., Phoenix, AZ. Sponsor: A.C.E.P., Arizona Affiliate-American Heart Association and ArMA. Contact: Carol Turner, ArMA Offices. Approved for 16 hours of category 1 credit.

Coconino County Medical Society Summer Medical Seminar
July 26-27. Little America Motor Inn, Flagstaff, AZ. Sponsor: Arizona Medical Association and Coconino County Medical Society. Contact: Thomas DaVee, M.D., 710 N. Beaver, Flagstaff, AZ 86001. Approved for 8 hours of category 1 credit.

AUGUST

Symposia de Santa Fe
August 21-23. Santa Fe Hilton, Santa Fe, New Mexico. Sponsor: Symposia de Santa Fe. Contact: W. J. Levy, M.D., Sec.-Treasurer, P.O. Box 5175, Coronado Station, Santa Fe, New Mexico 87502.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m. J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8—10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., U of A Health Sciences Center, Dept. of, Radiology, Tucson, AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

ARIZONA HEART INSTITUTE

4800 N. 22nd St., Phoenix, P.O. Box 10,000, Phoenix, AZ 85064. Contact: Ravi Koopot, M.D.
Clinical Conference Cardiovascular Medicine
Third Tues.,5:15 p.m., second floor classroom

ARIZONA STATE HOSPITAL

2500 E. Van Buren, Phoenix, AZ. 85008. Contact: Arnold L. Kendall, M.D.
A.S.H. Psychiatric Grand Rounds
2nd Wed., 1:00-2:00 P.M., J-6 Conf. Rm., Contact: Dr. Conger & Staff
Clinical-Pathological Conference
3rd Wed., 1:30-2:30 P.M. General Services Bldg., Conf. Rm.
Medical Grand Rounds
4th Wed., 1:00-2:00 P.M., Medical Bldg. Conf. Rm.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Sponsor: St Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.
Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.
Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.
Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Rm.—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists
Neuro-opthalmology Conference.
Weekly, 7:30 a.m., 8th floor conference Rm.
Neuropathology of Gross Specimens Conference
Thursday, 7:30-8:30 a.m. in the Morgue.
Neurology-Neurosurgical
Fridays, 8-9 a.m., First Floor Conference Rm.
Neuropathology or Neuroradiology Conferences
Friday, 9 a.m., Neuropathology in Neuropathology Conference Rm., Neuroradiology in First Floor Conference Rm.
Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Rm.
Neurosurgical Journal Club
Saturdays, 9-11 a.m. in Eighth Floor Conference Rm.

WALTER O. BOSWELL MEMORIAL HOSPITAL

10401 Tunderbird Boulevard, Sun City, AZ 85372. Contact: Martha R. Newby, ED.D., Director of Education.

Medical Department Continuing Medical Education
4th Wednesday, 12 Noon, C119. May, July, Sept. & Nov.
Tumor Board
last Thursday of the month, 12 Noon, Educ. Center Classroom I & II, May, July, Sept, & Nov.
Surgical Department CME
4th Friday, 7 A.M., Educ. Center Classrooms I & II.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.
Clinical Conference
3rd Tuesday, 8-9 a.m.

DESERT SAMARITAN HOSPITAL

1400 South Dobson Road, Mesa, Arizona, Contact: L.A. Rosati, M.D. Approved for category 1 credit.
Clinical Conference - Dept. of Medicine
Weekly Thurs., 12:30-1:30 P.M. Buffet Lunch, Grande Rm.
OB/GYN Medical Staff Conference
Weekly, Monday, 12:30-1:30 P.M. Grande Rm.
Pediatric Case Conference
2nd. Friday, 12:30 P.M., Grande 2

EL DORADO HOSPITAL TUCSON, (THMEP)

1400 N. Wilmont Road, Tucosn, AZ 85712. Contact: Eric G. Ramsay, M.D. Approved for category 1 credit.
Family Practice Department Meeting
1st Monday, 12 Noon, Contact: R. Grossman, M.D.

GOOD SAMARITAN HOSPITAL

1033 East McDowell Rd., Phoenix, AZ Contact: Warren A. Hinchcliffe, M.D. Approved for category 1 credit.
Anatomical Path. & Cytology
Weekly, Mondays 4:00-5:00 P.M., S-4 Conf Rm.
Gynecological Section Conference
2nd Monday, 12:30-1:30 P.M., West Rm
Monday Noon Conference
Weekly, 12:00-1:00 P.M. R-2 Conf. Rm.
Mortality/Morbidity, Surgery Comm.
2nd Monday, 11:30-2:00 P.M., West Rm.
Obstetrical Section Conference
1st Monday, 12:30-1:30 P.M., West Rm.
Pulmonary Disease Grand Rounds
Weekly, 12:00-1:00 P.M., D-5 North
Family Practice Conference
Weekly Tuesday, 12:00-1:00 P.M., Fam. Practice Conf. Rm.
Pediatric Grand Rounds
3rd. Tuesday, 7:30-8:30 A.M., Contact: Paul Bergeson, M.D.
Surgical Grand Rounds
Weekly, Tuesday 7:00-8:30 A.M. East Rm.
Clinical Cancer Fourm
3rd Wednesday, 12:00-1:00 P.M., West Rm, Contact: John A. Bruner, M.D.
Combined Cardiovascular & Family Practice Conf.
Ist, 2nd, & 4th Wed., 12:00-1:00 P.M., D-5 North.
Dr. Fenger's Lecture
Weekly, Wed., 12:30-1:30 P.M., R-2 Conf. Rm.
Learning Disabilities
Weekly, 10:30-12:30 A.M., R-2 Conf. Rm.
OBGYN Dept. Review & Statistics
Weekly, 12:30-3:00 P.M., OBGYN Conf. Rm.
PM & R Grand Rounds
1st. & 3rd. Wed., 12:00-1:00 P.M., R-2 Conf. Rm.
Gynecological Pathology
Weekly Thursday, 1:00-2:00 P.M., S-4 Conf. Rm.
GI Radiology Conference
1st Thursday, 12:00-1:00 P.M., F151, Radiology Conf. Rm.
Phoenix Ultrasound Soc. Meeting.
Medical Education Building, Contact: Dr. Ben Ora
Neurology Grand Rounds
Weekly Thursday, 9:00-10:00 A.M., D-5 North.
Tumor Treatment Planning Conf.
2nd & 4th Thursdays, 12:00-1:00 P.M., F151 Radiology
Joint Tumor Gyn Conference
2nd Friday, 12:30-1:30 P.M., West Rm.
Kinesology
Weekly Friday, 4:00-5:00 P.M., R-2 Conf Rm.
Medical Grand Rounds
Weekly Friday, 8:00-9:00 A.M., West Rm.
Neuropathy Conference
Last Friday, 1:15-2:15 P.M., S-4 Morgue.
Psychiatry Grand Rounds
Weekly Friday, 11:30-1:00 P.M. , East Rm.
PM & R Journal Club
Alt. Fridays, 12:00-1:00 P.M., R-2 Conf. Rm.

KINO COMMUNITY HOSPITAL,(THMEP)

2800 E. Ajo Way, Tucson, AZ. 85713. Contact: Eric C. Ramsay, M.D., Approved for Category 1 credit.
Attending's Hour
5th Monday, 12:30 P.M., Contact: J. Goldberger, M.D.
Infectious Disease Conference
3rd Monday, 12:30 P.M., Contact: Barry Friedman
Ophthalmology Conference
1st Monday, 12:30 P.M., Contact: Bruce Gillers, M.D.
Psychiatric Conference
2nd & 4th Mondays, Contact: J. Santiago, M.D.
Surgical Connference
Weekly Mondays, Contact: R. Fischer, M.D.
Cardiology Conference
4th Tuesday, 12:30 P.M., Contact: B. Phibbs, M.D.
Clinical Pharmacology Conference
5th Tuesday, 12:30 P.M., Contact: M. Katz, Clinical Pharm.
12**Neurology Conference**
1st & 3rd. Tuesday, 12:30 P.M., Contact J. Laguna, M.D.
Radiology Conference
2nd Tuesday, 12:30 P.M., Contact: M. Baker, M.D.
Medical Surgical Grand Rounds
2nd Wed., 12:30 P.M., Contact: Chief Medical Resident
Medical Conference
1st Wed, 12:30 P.M., Contact: Chief Medical Resident
Cardiology Conference
1st Thursday, 12:30 P.M., Contact: B. Phibbs, M.D.
Endocrine Conference
2nd Thursday, 12:30 P.M., Contact E. Munjack, M.D.
GI Conference
4th Thursday, 12:30 P.M., Contact: C. Kanun, M.D.
Mortality & Morbidity Conference
3rd. Thursday, 12:30 P.M., Contact: E. Munjack, M.D.
OB/GYN Dept. Meeting
2nd Thursday, 2 P.M., Contact J. Wurzel, M.D.
OB/GYN Pathology Conference
Weekly,Thursday, except 2nd, Contact: J Wurzel, M.D.
OB/GYN Sonograph/X-ray Conference
4th Thursday, 3 P.M., Contact: J. Wurzel, M.D.
Clinical Pathology
5th Thursday, 12:30 P.M., Contact: J. Fleishman, M.D.
Renal Conference
1st Friday, 12:30 P.M., Contact: T. Pence, M.D.
Hematology Conference
2nd & 4th Friday, Contact: S. Ketchel, M.D.
Rheumatology Conference
3rd Friday, 12:30 P.M., Cntact J. Goldberger, M.D.
Chest Conference
5th Friday, 12:30 P.M., Contct: D. Engelsberg, M.D.

MARYVALE SAMARITAN HOSPITAL

5102 W. Campbell Ave., Phoenix, AZ 85008
Continuing Medical Education Program
Every other Wednesday, 7-8 A.M.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Contact: Leonard Tamsky, M.D.
Medicine Conference
Daily 12-1 P.M., Contact: S. Schaffner, M.D.
Chest Surgery Conference
Weekly, Mondays, 1:30 P.M., Santa Cruz Rm.
Hepatology Conference
2nd Tuesday, 1:00 P.M., Contact: Walt Koppenbrink, M.D.
OB/GYN Dept. Grand Rounds
Weekly Tuesday, 12 Noon, Santa Cruz Room
Obstetrical Problem Conference
Weekly Tuesday, 7:30 A.M., Yavapai Rm.
Orthopedic Conference
Weekly Tuesday, 7:30 A.M., Santa Cruz Rm.
Pediatric Grand Rounds
2nd Tuesday, 7:30-8:30 A.M.,Contact: Robert Ganelin, M.D.
Urology Discharge Planning Conference
Weekly, 11:30 A.M., Station 42
Hand Surgery Conference
Weekly Wed, A.M., Santa Cruz Rm.
Neurosurgery Discharge Planning
Weekly Wed., 1:30 P.M., Station 42.
OB/Neonatology Seminar
Weekly, Wed. 7:30 A.M., Yavapai Rm.
Clinical Psychiatric Conference
Weekly, Wed., 11-12 P.M. Mental Health Annex, Rm. 1346.
Surgery Conference
Weekly Wed., 7-8 A.M., Surgical Dept.
Cardiology Conference
Weekly Thurs., 2 P.M., Santa Cruz Rm.
OB/GYN Resident Conference
Weekly Thurs., 12 P.M., Yavapai Rm.
GYN Endocrine Seminar
1st & 3rd Friday, 12:30 P.M., Sanata Cruz Rm.
OB/GYN Surgical Pathology Conf.
Weekly Friday, 7:30 A.M., Yavapai Rm.
Orthopedic X-Ray Conference
Weekly Friday, 7:30 A.M., Santa Cruz Rm.

PHOENIX BAPTIST HOSPITAL & HEALTH CENTER

6025 N. 20th Ave., Phoenix, AZ 85015. Contact; James L. Grobe, M.D., Approved for category 1 credit.
Medical & Surgical Conference
Weekly Monday, Wed. and Friday, 12 Noon
OB/GYN Section Conference
3rd & 4th Mondays, 1st Floor Conf. Rm.

PHOENIX INDIAN MEDICAL CENTER

4212 North 16th St., Phoenix, AZ 85016. Contact: Leland L. Fairbanks, M.D., Approved for Category 1 credit.
Pediatric Grand Rounds
1st Tuesday, 7:30-8:30 A.M., Contact: D. Randall, M.D.
Clinical Staff Teaching Conference, Rm. A.
Wed. Weekly, 8:00 A.M.
Family Practice/Emergency Room Teaching Conference
Thursday Weekly, 7:30-8:30 A.M., Conf. Rm. A, Contact: Drs. L. Moher & L. Fairbanks.

PHOENIX MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Contact: George Scharf, M.D. Approved for Category 1 credit.
Monthly Medical Education Seminar
3rd Monday, 6:30 P.M., Kiva Conf. Rm.
Clinical Conferences
Weekly Tuesday, 12 Noon, Kiva Conference Room
Tumor Board Conference
Weekly Friday, 12 P.M., Kiva Rm. Contact: H. Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 East 4th Street, Scottsdale, AZ 85251. Contact: W. S. Williams, M.D., Approved for category 1 credit.
Family Practice Conference
1st Monday, 12:30 P.M., Doctors' Lounge
Morbidity & Mortality Conference
2nd Monday, 12:30 P.M., Doctors' Lounge
Neurology & Neurosurgery Conference
3rd Monday, 12:30 P.M., Doctors' Lounge
Internal Medicine-Clinical Pathological Conference
4th Monday, 12:30 P.M., Doctors' Lounge
Pulmonary Medicine Conference
1st Tuesday, 12:30 P.M., Doctors' Lounge
Cardiology Conference
2nd Tuesday 12:30 P.M., Doctors' Lounge
Surgery Departmental Meeting
3rd Tuesday, 12:15 P.M., Doctors' Lounge
Thoracic & Vascular Surgery Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
Cardiolpulmonary Conference
4th Tuesday, 12:30 P.M., Doctors' Lounge
OB/GYN Dept. Meeting & Conf.
2nd Wed., 12:30 P.M., Doctors' Lounge
Trauma Conference
3rd Thurs, 12:30 P.M., Doctors' Lounge
Tumor Conference
4th Thursday, 12:30 P.M., Doctors' Lounge
Psychiatry & Behavioral Sciences Conference
1st Friday, 12:30 P.M., Doctors' Lounge
GI Medical—Surgical Rdiological Conf.
2nd Friday, 12:30 P.M., Doctors' Lounge
Uronephrology-Oncology
Last Friday, 12:30 P.M., Doctors' Lounge

ST. JOSEPH'S HOSPITAL PHOENIX

350 West Thomas Road, Phoenix, AZ 85013. Contact: Joseph C. White, M.D.
OB/GYN Section Conference
3rd & 4th Mondays, 12:30-1:30 P.M., 1st Floor Conf. Rm.
Genetics Conference
Weekly Monday, 12:30 P.M., Pediatric Department
Pediatric Rounds
Weekly Monday, Wed., & Friday, 10:30 A.M., Pediatric Department
Pediatric Grand Rounds
4th Tuesday, 7:30-8:30 A.M., Contact: J. Kipp Charlton, M.D.
ECG. Conference
Weekly Tuesday, 12:30 P.M., Pediatric Department
Medical Grand Rounds
Weekly Wednesday, 8 A.M., 1st Floor Conf. Room
Visiting Professor Formal Presentation
Weekly Thursday, 8 A.M., PIMC
Visiting Professor Informal Rounds
Weekly Thursday, 9:30 A.M., 1st Floor Conf. Room
Visiting Professor Formal Presentation
Weekly Thursday, 12:30 P.M., PIMC.
Nephrology Conference
Weekly Friday, 12:30 P.M., Pediatric Department

ST. JOSEPH'S HOSPITAL (THMEP) TUCSON

350 N. Wilmot Road, Tucson, AZ. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.
Family Practice Department Meeting
3rd Tuesday, 12 P.M., Contact Wm. Moteforte
Ophthalmology Morbidity/Mortality Conf.
4th Tuesday, 12:15 P.M., Contact: Kim Sowards.
Current Concepts in Medicine
Weekly Tuesday, 12 P.M., Auditorium.
Hematology-Oncology Conference
Last Wednesday, 12:15-1:15 P.M., Contact: S. Salmon, M.D.

ST. LUKE'S HOSPITAL MEDICAL CENTER

525 North 18th Street, Phoenix, AZ, Contact: Gerald L. Hansbro, M.D.
Cardiac Conference
Weekly Monday, 12:15 P.M., Auditorium
Surgery Conference
1st Tuesday, 12:15 P.M., Auditorium
Emergency Medicine Conference
1st Wednesday, 12:15 P.M., Auditorium
Cardiovascular-Thoracic Record Review
3rd Wednesday, 12:15 P.M., Auditorium
Psychiatry Conference
3rd Thursday, 7 A.M., Auditorium
Combined Medical-General Practice Conference
1st Friday, 12:15 P.M., Auditorium
Toxicology Grand Rounds, Auditorium
1st Friday, 7:30 A.M., Auditorium
Ophthalmology Conference
1st Saturday, 8:30 A.M., Auditorium.

ST MARY'S HOSPITAL & HEALTH CENTER

1601 W. St. Mary's Road, Tucson, AZ 85703. Contact: see below.

Monthly Specialty Conference-Dept. of Surgery
1st Monday, 7:30 A.M., Century Rm. A. Contact: Med. Staff Office.
Grand Rounds: Medical Surgical, Family Practice, Pathology, Radiology
Weekly Thursday
Emergency Medicine Lectures
Weekly Thursday, 8 A.M., Century Room A
Mental Health Update
1st Friday, 11:30-1:00 P.M., Century Room A
Cardiology Conference
Weekly Friday, 8:00-9:00 A.M., Century Rm. Contact: Anthony Forte, M.D.

TUCSON MEDICAL CENTER (THMEP)

5301 E. Grant Road, Tucson, AZ 85716. Contact: Eric G. Ramsay, M.D. Approved for Category 1 credit.

Cardiology Conference
Weekly Monday, except last, 12 Noon, Contact: J. Fernadez, M.D.

Dermatology Conference
4th Monday, 5:15 P.M., Contact: R. Friedman, M.D.

Endocrinology Conference
Last Monday, 12 P.M., Contact M. Parker, M.D. **Perinatal Conference**
2nd Monday, 7:30 P.M., Contact: J. Lohman, M.D.

Hematology Conference
2nd, 3rd, 4th Tuesday, 12 Noon, Contact: M. Boxer, M.D.

Orthopedic Conference
1st Tuesday, 7:30 P.M., Contact: L. Mann, M.D.

Pediatric Grand Rounds
1st & 3rd Tuesday, 12 Noon, Contact: H. Thompson, M.D.

Cardiac Cath. Conference
2nd & 4th Wednesday, 5:15 P.M., Contact: L. Buckels, M.D.

Family Practice Meeting
2nd Wednesday, 12:30 P.M., Jan., April, July, & Oct. Contact: C. Mangelsdorf, M.D.

Medical Conference
Weekly Wednesday, 8:00 A.M., Contact: M. Fuchs, M.D.

Neurology-Neurosurgery Conference
Weekly Wednesday, 12 Noon, Contact: H. W. Buschsbaum, M.D.

Chest Conference
3rd. Thursday, 12 Noon, Contact: Wm. Nevin, M.D.

Dermatology Conference
1st Thursday, 12 Noon, Contact: R. Friedman, M.D.

Gynecologic-Oncology Disposition Conf.
Weekly, Thursday, 8:30 A.M., Contact: E. A. Surwit, M.D.

Infectious Disease Conference
2nd Thursday, 12 Noon, Contact: B. Friedman, M.D.

Nephrology Conference
4th Thursday, 12 Noon, Contact: S. Seltzer, M.D.

Neuroradiology Conference
Weekly Thursday, 5:00 P.M., Contact: N. Komar, M.D.

Tumor Conference
Weekly Thursday, 12 Noon.

G—I Conference
Weekly Friday, 12 Noon, Contact: C. Krone, M.D.

Interhospital Nuclear Medicine Conference
Weekly Friday, 7:15 A.M., Contact: S.V. Hilts, M.D.

OBGYN Conference
1st Friday, 7:30 A.M., Contact: P. Evans, M.D.

OBGYN Pathology Conference
3rd Friday, 7:30 A.M., Contact: R. Spark, M.D.

U OF A HEALTH SCIENCES CENTER

Sponsor: U of A College of Medicine, Tucson, AZ 85724. Contact: See below. Approved for category 1 credit.

Anesthesiology Board Review Conference
2nd & 4th Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Dr. Vaughn & Kryc.

Anesthesiology Basic/Clinical Sciences Lectures
Weekly Thursday, 4:00-5:00 P.M., Room 5403

Anesthesiology Case Discussion
Weekly Wed., 7:00 A.M., AHSC, Dining Rm. C&D.

Anesthesiology Resident Presentation
1st Monday, 4:00-5:00 P.M., AHSC Dining Room, C&D, Contact: Drs. Otto & Zehngut.

Cancer Center Tumor Board Seminar
3rd Tuesday, Monthly, 12-1 P.M., HSC Auditorium, Contact: Cancer Center

Cardiac Catheterization Conference
Weekly Friday, 4:00 P.M., Contact: Dr. Temkin.

Cardiology Conference
Weekly Monday, 12:00 P.M., AHSC, Contact: Dr. J. Fernandez

Cardiology Research Conference
Weekly Tuesday, 7:30 A.M., Contact: Dr. Roeske.

Tucson Cardiovascular Society
1st Thursday, 6:00 P.M., AHSC, Contact: Dr. Byrne-Quinn

Cerebrovascular Disease Conference
Weekly Monday, 5:00-6:00 P.M., AHSC, Rm. 5505, Contact: Dr. W. Moore

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 P.M. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 P.M., Weekly, Rm. 5505. Contact: Wesly Moore, M.D.,Depts. of Surgery, Nurology & Radiology.

Dermatology Conference
4th Monday, 5:15 P.M., AHSC, Contact: Dr. R. Friedman.

Dermatology Rounds
Weekly Wed., 11:30 A.M., Contact: Dr. Lynch

Endocrinology Seminar
Weekly Thursday, 12:00-1:00 P.M., Contact: Dr. Johnson

GI Pathology Conference
4th Friday, 1:30 P.M., AHSC, Contact: S. Paplanus

GI Radiology Conference
2nd. & 4th Mondays, 7:30 A.M., AHSC, Contact: Dr. T. Hunter

Head & Neck Tumor Management Conference
Weekly Wed., 4:00 P.M., Contact: Dr. Manning

Hematology-Oncology Clinical Conference
1st & 5th Tuesdays, Noon-1 P.M., Room 6505. Contact: S. Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Weekly Wed., 12:00-1:00 P.M., AHSC, Contact: Dr. J. Smith.

Morbidity/Mortality in E.M.
2nd Tuesday, 9:00 A.M., AHSC, Contact: Drs. Hughes & Alcorn

Neuromuscular Disease Conference
Weekly Friday, 11:30 A.M., Contact: Dr. Stern

Neuropathology Review Conference
Thursdays, 8:30 A.M., Rm. 5120, UAHSC.

Neuroradiology Conference
Weekly Thurs., 5:00 P.M., Contact: Dr. P.C. Christenson

Neuromuscular Journal Conference
2nd & 4th Thursday, 7:00-9:00 P.M., Contact: Dr. Stern.

Neuropathology Case Review
Weekly Friday, 8:30 A.M., AHSC, Contact: Dr. P. Johnson.

Neurosciences Seminar
Weekly Tuesday & Friday, 7:30 A.M., AHSC, Contact: Dr. C. Bamford

Nuclear Medicine
Weekly Thursday, 7:30 A.M., AHSC Radiology Conference Room

Ophthalmology Grand Rounds
Weekly Friday, 8:00 A.M., AHSC, Contact: Dr. H. Cross

Ophthalmology Retina & Fluoro. Conference
Weekly Thursday, 5:00 P.M., AHSC Contact: Dr. H. Cross

Orthopedic Conference
1st Tuesday, 7:30 P.M., TMC. Contact: Dr. L. Mann

Orthopedic Rounds
Saturday, 8:00 A.M., Contact: Dr. Peltier.

Pain Conference
3rd Monday, 4:00-5:00 P.M., AHSC Dining Rm. C&D, Contact: Drs. Hameroff & Cork.

Pathology Seminar
Weekly, 4:30-5:30 P.M., AHSC, Room 5120. Contact: Dr. P. Finley

Clinical Pathology Conference
5th Thursday, TMC, Contact: Dr. M. Fuchs

Tucson Pathologist Conference
1st Monday, 7:30 P.M., AHSC, Contact: Dr. A. R. Graham.

Pediatric Grand Rounds
2nd & 4th Tuesdays, 12:00 P.M., AHSC, Contact: Dr. H. Thompson.

Pediatric Problem Patient Conference
Weekly Wed., 8:00 A.M., Contact Dr. Walson

Pediatric Research Forum
Weekly Tuesday, 7:30 A.M., Contact: Dr. James Jones

Pediatric Specialty Conference
Weekly Friday, 8:00 A.M., Contact: Dr. Philip Walson.

Peri-Natal Conference
2nd Monday, 7:30 P.M., AHSC, Contact: Dr. J. Lohman.

Psychiatric Monthly Case Conference
2nd Friday, 7:30 A.M., Contact: Dr. Alan Levenson,Palo Verde Hospital

Pulmonary Rounds
Weekly Friday, 11:30 A.M., Contact Dr. Benjamin Burrowns.

Chest Radiology
Weekly Monday, 5:00-6:00 P.M., Rm 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Neuroradiology Teaching Conference
Weekly Wednesday, 7:30 A.M., AHSC, Contact: Dr. Christenson

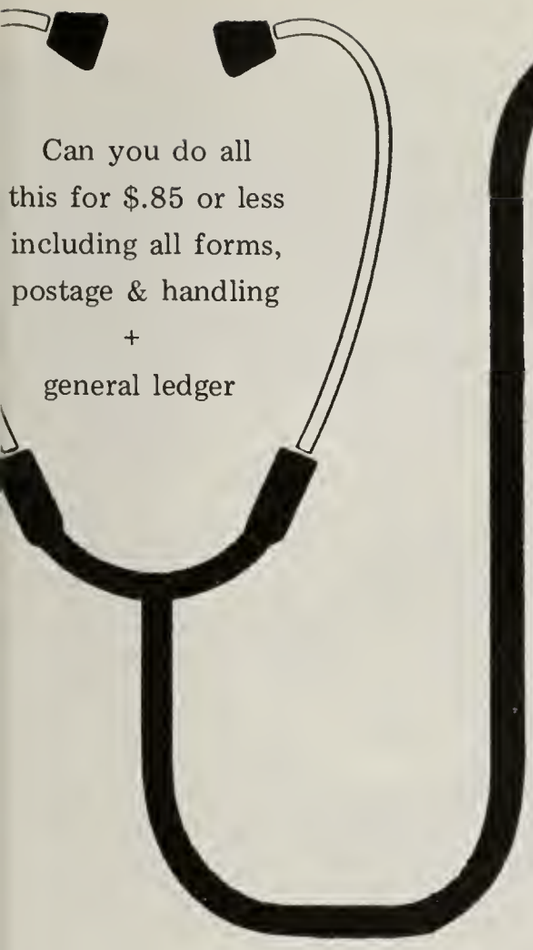
Radiation Oncology Planning Conference
Weekly Friday, 8:30-10:00 A.M., AHSC, Room 0655

Radiology Interesting Case Conference
Weekly Thursday, 12:00 Noon, AHSC, Contact: Dr. Freundlich

Gastrointestinal Radiology
Weekly Tuesday, 5:00-6:00 P.M., AHSC, Contact: Radiology Dept.

Radiology-Rheumatology Conference
Weekly Thursday, 7:45 A.M., UAHSC, Library Rm.1535C. **Uroradiology (Genitourinary Radiology)**
2nd & 4th Mondays, 7:30- 8:30 A.M., AHSC, Contact: Dept. of Radiology

Renal Pathology Conference
1st & 3rd Thurs., 11:30 A.M., Contact: Dr. Nagle.



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Residents Noon Conference
Weekly Tuesday & Thursday, 12:00 Noon, AHSC, Contact: Dr. A. Greensher.
Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Rm.
Surgical Morbidity & Mortality Conference
Weekly Wed., 8:00 A.M., Contact: Dr. Wangensteen.
Joint Thyroid Conference
1st & 3rd Wed., Contact: S. C. Werner, M.D.
Trauma Conference
Every Thursday,4-5 p.m. UAHSC, Rm. 5505.
Ward Grand Rounds - Trauma
Weekly Tuesday, 8:00 A.M., Contact: Dr. M. Silverstein.
Toxicology Conference
Weekly Tuesday, 8:00 A.M., Contact: Dr. Keith Likes

Tucson Ultrasonography Group
Weekly Wed., 4:30 P.M., AHSC, Contact: Dr. I. Freundlich.
General Urology Conference
Weekly Tuesday, 12:00 Noon, AHSC & VA Hospital Contact: Dr. G. W. Drach.

PHOENIX VETERANS ADMINISTRATION MEDICAL CENTER

7th Street and Indian School Road, Phoenix, AZ 85012. Contact: Alfred Heibrumn, M.D. Approved for Category 1 credit.
GI X-Ray Clinical Correlation Conf.
1st & 3rd Monday, 1 P.M., Rm. C435, Contact: Dr. Sanowski, Ext 618.

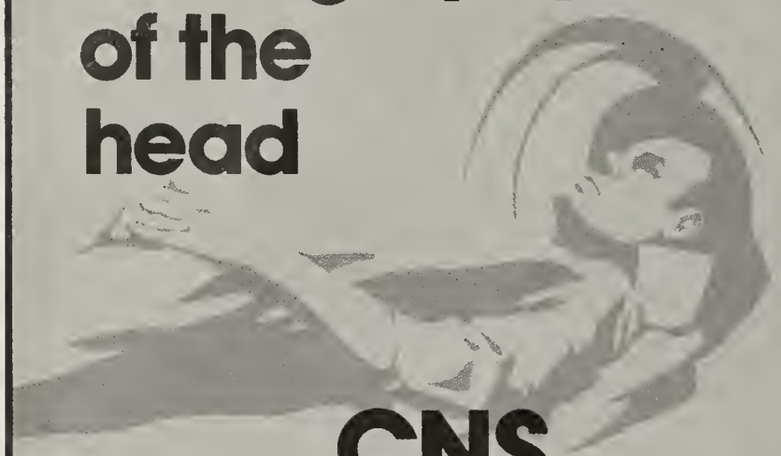
Medical/Surgical GI Conference
1st & 3rd Monday, 3 P.M., Rm. 3134, Contact: Dr. Kozarek, Ext 413. Dr. Mertz, Ext 493.
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Monday, 4 P.M., RM. 3134, Contact: Dr. Mertz, Ext 493.
GI Pathology Conf.
2nd & 4th Monday, 1 P.M., Path Conf. Rm, Contact: Dr. Sakowski.
Vascular Conference
2nd Monday, 3 P.M., Room 3134, Dr. Cintora, Ext 419
Surgery/Pathology Conference & Tissue Review
1st & 3rd Tuesday, 4 P.M., Room 2128, Contact: Dr. Likos & Mertz.
Surgery Mortality/Morbidity Conference
4th Tuesday, 4 P.M., Room 3134, Contact: Dr. G. Mertz.
GI Grand Rounds
Weekly Tuesday, 1 P.M., Contact: Drs. Sanowski, Kozarek & Partyka
GI Rounds
Weekly, 2 P.M., Contact: Dr. Harlan.
Dermatology Conference
1st, 2nd & 3rd Wed., 10 A.M. - C118, Contact: Dr. Roberts, Ext. 426.
Cancer Symposium
Weekly Wed., 1 P.M., T-5, Contact: Dr. Byrne, Ext. 426.
Housestaff Pulmonary Disease Teaching Conf.
Weekly Wed., 3-4 P.M., Contact: Dr. Rohwedder, Ext. 388.

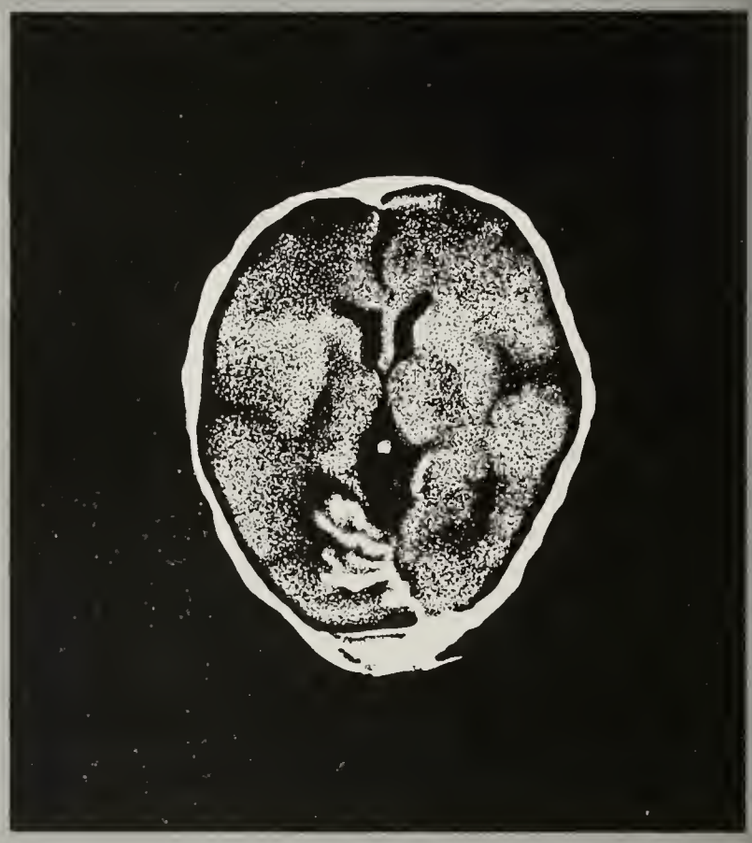
Surgical X-Ray Conf. & Bedside Teaching Rounds
Weekly Wednesday,4 P.M., Rm 3134. Contact: Dr. Mertz, Ext. 493.
Medical Surgical Chest Conference
1st & 3rd Thursday, Contact: Dr. Rohwedder or Dr. Gill.
Cardiology Conference
2nd Thursday, 1 P.M., Rm. T-5.
Medical Service Grand Rounds
Weekly Friday, 11 A.M., Contact: Dr. Zeller
Surgical Journal Review & Videotape Session
Weekly 1 P.M., Room 3134.

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Medical Lectures
1st & 2nd Thursday & Weekly,Fridays, 1:30 P.M., Bldg. 28. Contact: J. W. Fitzharris, D.O.
GI Rounds
Third Thursday, 10 A.M.-2:30 P.M., Contact: J. W. Fitzharris, D.O.
Medical Rounds
First & seond Thursday, 1:30 P.M., Bldg. 28, Contact: J. W. Fitzharris, D.O.

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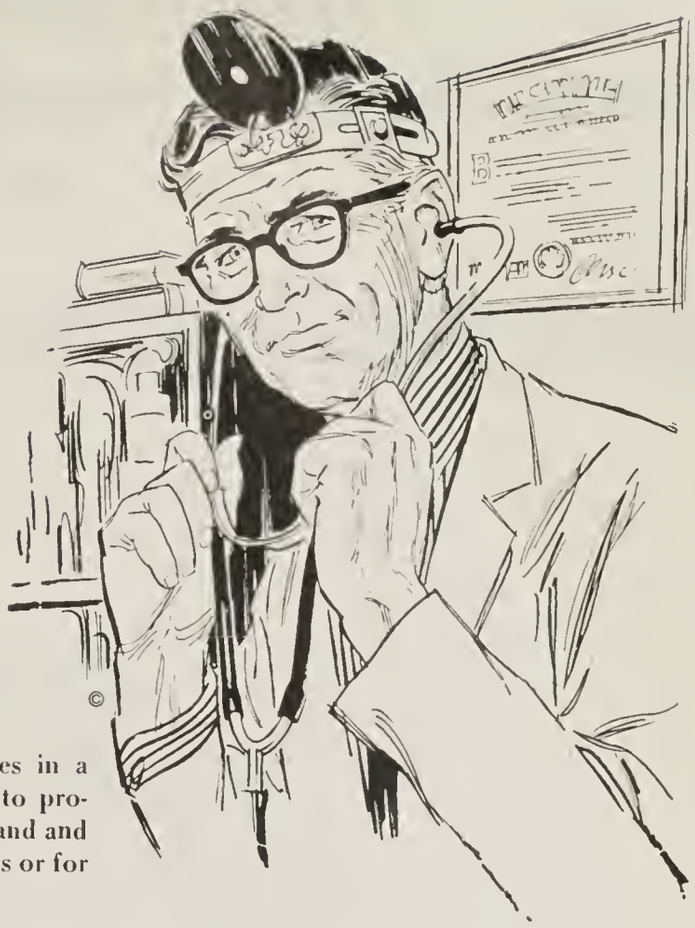
Medical Surgical Chest Conference
Weekly Tuesday, 2 P.M., Contact: Dr. Young
Medical Grand Rounds
Weekly Wed., 12-1:00 P.M., VA Hospital Staff Conf. Rm. & (AHSC), Contact: Jay Smith, M.D.
Surgical Grand Rounds
Weekly Wed., 4:00 P.M., Contact: Dr. Putnam
Endocrinology Seminar
1st, 3rd, & 5th Thursday, 12-1:00 P.M., Rm. N318, Contact: Dept. of Internal Medicine.
Grand Rounds
Weekly, Thursday, 11 A.M., Bldg. 107, Contact J. Fitzharris, D.O.
Vascular Radiology, Interesting Case Conf.
Weekly Thursday, 12:00 Noon.
Neurology Grand Rounds
Weekly Friday, 12 P.M., Contact: Dr. Sibley.

YUMA REGIONAL MEDICAL CENTER (U of A, Tucson/ArMA)

2400 Avenue A., Yuma Az 85364. Contact:Alan Winfield, M.D. Approved for category 1 credit.

Radiology Conference
1st Tuesday, 7:00 A.M.
Operation Outreach
2nd Tuesday, 6:30 P.M.
Pathology Conference
4th Tuesday, 7:00 A.M.
Operation Outreach
2nd Wednesday, 7:00 A.M.

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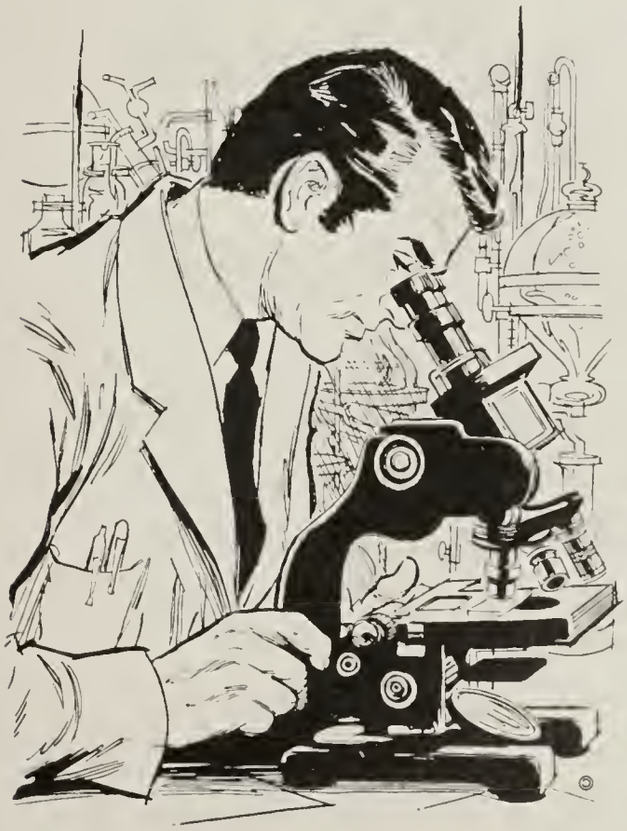
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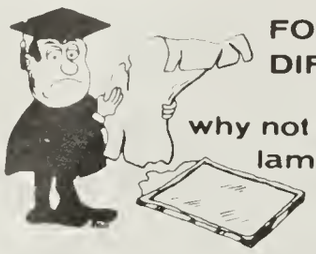
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Borhringer Ingelheim
Catapres 408, 409, 410
Camelback Hospital 395
Classified Ads 450, 451
Computed Neuorological Scanning Center 446
Computed Tomography 388
Data Management Systems Corp. 445
Doctors Central Directory 450
Doctors Hospital 393
Eli Lilly & Co.
Ceclor 389
Fisherman's Village 398
HBA Life Insurance 447
The Headache Group of the Southwest 449
Health Agencies of the West 448
House of Mailings 450
Kiva Professional Plaza 398
Medical Bookstore 450
MEDSECO 438
Mica Insurance Co. 399
Mullen Medical Service 450
Pfizer Laboratories
Sinequan 390, 391, 392
Roche Labs
Valium Second Cover, 387
Librium Third Cover, Fourth Cover
William H. Rorer
Perdiem 436, 437, 438
Roswell Bookbinding 388
Danny Sievert
Insurance 450
Smith Kline Diagnostic
Hemocult 435
Smith Kline & French
Tagament 407
UpJohn Company
Motrin 396, 397, 398
US Navy 387
Western X-Ray Systems, Inc. 387
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